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ABSTRACT

This thesis documents how a wildland site became the cornerstone of an environmental education system concerned with the development of site, educational program, community action, and enrichment projects. The process described should help others interested in developing a similar community based environmental education facility. Four major project objectives are established: (1) the site, (2) program, (3) public involvement, and (4) enrichment. The system is described for keeping these interacting functions working together. The objectives were evaluated as were the benefits to the local college and community. Included in the appendix are (1) a bibliography of materials concerning the development of outdoor education centers, and (2) forms and other working documents pertaining to student interviews, curriculum activity evaluations, lesson plans, and interest and activity surveys. (Author/AJ)

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"Dedicated to use by students as an extension of their 'in-town' education using the natural and manmade environment here to teach the natural sciences, social studies, the humanities and the relationships between them."

Entrance Sign at the
Ragged Ridge Center

This project has literally involved hundreds of people in scores of agencies, institutions, and organizations over the past four years. Any success must be attributed to the way these persons have cooperated with the Ragged Ridge Center director on local, state, and federal levels: the public and private school teachers who have contributed their efforts in teaching night school courses, curriculum writing, special committee work and conducting pilot classes; school administrators; the individual Whitworth professors who have assisted in the inservice courses and workshops; local public and private agency personnel who have served in advisory capacities; the directors and others in organizations who provided funding or furnished labor; the state and federal agency people who contributed counseling and consulting services and helped conduct seminars and workshops; and fellow students at Washington State University who assisted in the beginning phase with investigations, graphics, and other input--Cathy Ciolek, Jim Gebhardt, Mike Murphy, Mark Quinn, and Barry Stern.

Dr. Edward Lindaman, president of Whitworth College, and Dr. Duncan Ferguson, vice-president for Academic Affairs, have given much personal and valuable time to the cause of the Ragged Ridge Center and environmental education. If other names stand out for constancy of availability and help, they would also include Glenn Hinsdale of the National Park Service, Seattle; Dr. Frank Brouillet, Washington State Superintendent of Public Instruction and his environmental education staff, David Kennedy, Lloyd Rowley, and Tony Angell; Jack Warner, benefactor of the land to Whitworth and willing guide and counselor in land matters; Hal and Esther Dornsife of the Hedco Foundation who furnished the bulk of outside financial aid; Dave Scott and Ken Struckmeyer, Department of Architecture and Landscape Architecture, respectively, at Washington State University; Al O'Donnell and Phil Hildebrand of the State Department of Natural Resources for help over tight spots; Dave Reynaud and his supervisors of the Washington State Parks and Recreation Commission regarding Youth Conservation Corps activities; Doug Grim, a resourceful supervisor of construction for the Center; Esther Lancaster, a dedicated teacher of the environmental scene; and my thesis advisors, Dr. Richard Shew, Dr. Leonard Askham, and Dr. Robert Grunewald who must have worked harder than normally required to shepherd this thesis into its final form. Much understanding has been required of my wife, Elsie, these past four years. And lastly, thanks to my thesis typist, Ava Butler, for helping steer the author through the final drafts of this manuscript.

A SYSTEM APPROACH TO THE DEVELOPMENT OF A WILDLAND SETTING AND ASSOCIATED PROGRAM FOR ENVIRONMENTAL EDUCATION

ABSTRACT

by Merle Pafford Prater, M.S.
Washington State University, 1977

Chairman: Richard Snew

The work reported on in this thesis results from the four-year development project of the Whitworth College Ragged Ridge Center for Outdoor Educational Opportunities. It began as an undergraduate study in Washington State University as part of a wildland recreation course which the college went on to use as a basis for further study and development.

Four major project objectives were established: the site, program, public involvement, and enrichment (depth). The system is described for keeping these interacting functions working together. How the objectives were met are evaluated as are the benefits to the college and the community.

It is hopeful that this work will help those who are establishing similar centers. A large set of forms and other working documents are provided in the Appendix.

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INTRODUCTION

This thesis documents how a wildland site became the cornerstone of an environmental education system concerned with development of site, educational program, community action, and enrichment projects.

The project was sponsored by Whitworth College in Spokane, Washington. In early 1973, the college invited the author, who was an undergraduate at Washington State University, to study a 720-acre site as a class project for a range of developmental alternatives. The overall goal was to develop this property for the benefit of Whitworth and the surrounding community (Lindaman 1973; Whitworth College 1973:4).

The original study concluded that the site was best suited for environmental and recreational development. A more detailed follow-up study recommended limiting development to an environmental education[1] center, and the area was named the Ragged Ridge Center for Outdoor Educational Opportunities.

This thesis reports a development process (chart, Fig. 1)[2] that should help others interested in developing a

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[1]See definition of environmental education, Appendix A.1, which explains some of the differences between nature education, conservation education, outdoor education, and environmental education; and from this, differences in educational approaches.

[2]The chart of Appendix B.1 shows the detailed steps of the system developed and in use by the Ragged Ridge Center project.

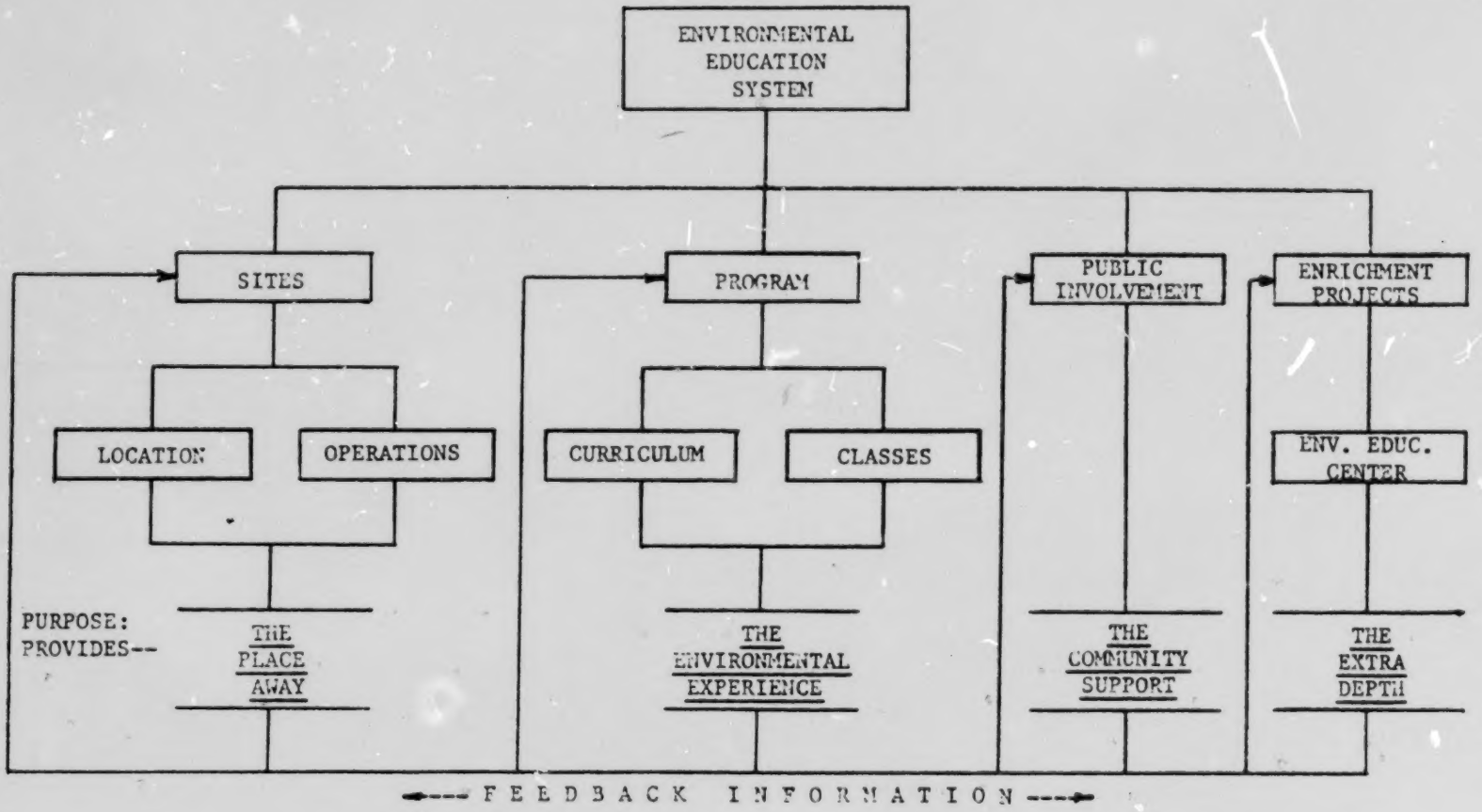

Fig. 1.--Functional structure chart of the Whitworth College Ragged Ridge Center environmental education system.

similar community-based environmental education based facility.

Statement of Problem

Many approaches and phases of developing environmental education centers have in some form or other been described in the literature. One listing of environmental center and program development has been compiled by Stapp and Liston (1975) which they claim covers the range of efforts in environmental center and program development. The author has not found any authority or center that has a methodology that systematically considers the development problem from the structure as shown in the chart of Fig. 1 or as expanded on in Appendix B.1.

In a related field, the National Audubon Society recognized as early as 1963 the "nature and conservation" center as a "new idea" (Ashbaugh 1973:5). It has produced several booklets concerned with the functions of planning, development, and operation of these centers (Shoman 1964; Ashbaugh and Kordish 1971; Ashbaugh 1973). These booklets provide suggestions on site acquisition, community action, program planning, building construction, suggested trail layouts, and other features. From a system standpoint (Fig. 1; Appendix B.1), however, there is little information about how they connect their functions for accomplishing the desired objectives, or provide feedback mechanisms for improvements.

4

Other approaches concerning parts of the system have been reported on. Passineau (1975) describes a system approach in regard to the importance of feedback in environmental education. In his system, he defines his constituency, identifies program goals, specifies education objectives, makes a need assessment, designs the educational program, implements the program, evaluates results, and recommends improvements. Major and minor feedback loops are shown. However, his system is general and mainly program oriented without specifically considering the details of site, the external community, or enrichment aspects.

Watkins (1975) describes a school/community environmental education model where school classes do environmental service work for the community. The community is shown to be aware of a need which it investigates and determines needed services and projects. This information is given to the school system which takes the concept, makes a generalized principle of it, and then applies it to the community. Although this is more direct action oriented than the Ragged Ridge Center system model is, it does complete a program/community loop. There is an evaluation built in regarding behavior of the class members and replicability of the project.

Systemwise, detailed step-by-step environmental education procedures can become detailed quickly. In one instance, class participation in an environmental sensitivity project required 8 pages of charted procedures (Hyatt and Lish 1973). Their chart also includes an evaluation step, which feeds

information back to the Center director. Again, however, the procedure deals mainly with the program functions and includes such elements as presite, onsite, and postsite work as does the Ragged Ridge Center. Their system does not attempt to cover site or community functions, but does deal with enrichment.

Hawkins and Vinton discuss the system approach to planning and implementation from the standpoint of "looking at . . . objectives in such a way that management of complex problems become realistic and achievable" (1973:133). They are confident that an interactive man/environmental learning system (the environmental classroom) can evolve from the present learning environment through environmental design, operational strategies, and educational theory. Their conclusion is that environmental education precepts should be based on the systems approach to account for variables, to handle problems, and to have constructive evaluation. These are the essential premises upon which the Ragged Ridge system has been built.

Thesis Objective

The objective of this thesis is to describe and evaluate the methods and actions taken to develop and implement the Ragged Ridge Center property, educational program, community involvement, and enrichment programs. The Center was created to provide an environmental education facility for the community, college, and region.

CHAPTER 1

PRELIMINARY STUDY

Washington State University Student Project

During the spring term of 1973, four Washington State University students studied developmental alternatives for the Whitworth College Ragged Ridge mountain site. The study resulted in a final report that included technical information, premises, and alternatives for future development (Prater et al. 1973a).

Assessing Community Concern

The initial needs assessment of the Spokane, Washington area was made to determine the best use of the property. The interview schedule of Appendix C.1 was used to survey several community leaders. An array of alternative uses were suggested during the interview (forest products, recreation, wilderness or wildlife area), yet analysis of the data showed that recreation and, surprisingly, education (which had not been suggested), were the more popular of the potential uses.

Development Plan

Efforts of the student study team focused on the development plan for the area. After the survey results were analyzed, the original recreational program emphasis was shifted to include strong educational and environmental components.

Inspection of the site (Fig. 2), now called the Ragged Ridge area, showed that it was a microcosm typical of mountains in northeast Washington. For example, the site had elevations from 2700 to 4500 feet; rock outcroppings and slopes facing in all directions; all coniferous and most deciduous trees common at these altitudes; ample evidence of animal life; and habitats from barren outcroppings to bogs and swamps, to dry hillsides and from deep woods to open meadows. In addition, the property had relatively level areas for buildings, ample water supply, and was protected at the lower elevations by surrounding mountains and ridges (Fig. 3). Soils were well drained and developed. The mid-elevations (3300-3500 feet) had been homesteaded by several families and other signs of man such as logging, grazing, and road building were evident. With these property characteristics documented, planning of support facilities such as trails and residential buildings was undertaken.

Using available small scale topographic maps of the area, and a projection and overlay scheme, a large basic map (1 inch = 200 feet scale) was created of the Ragged Ridge Planning Unit. From this, other special maps were created. These maps showed slope variations, forest habitats, ridgeline/drainage patterns, existing vegetation, soils, and the master plan.

The foregoing work demonstrated that the 720-acre site was suitable for development as an environmental/recreational area (Prater et al. 1973a:30). An alternative that looked feasible for further development of the Ragged Ridge site had emerged.

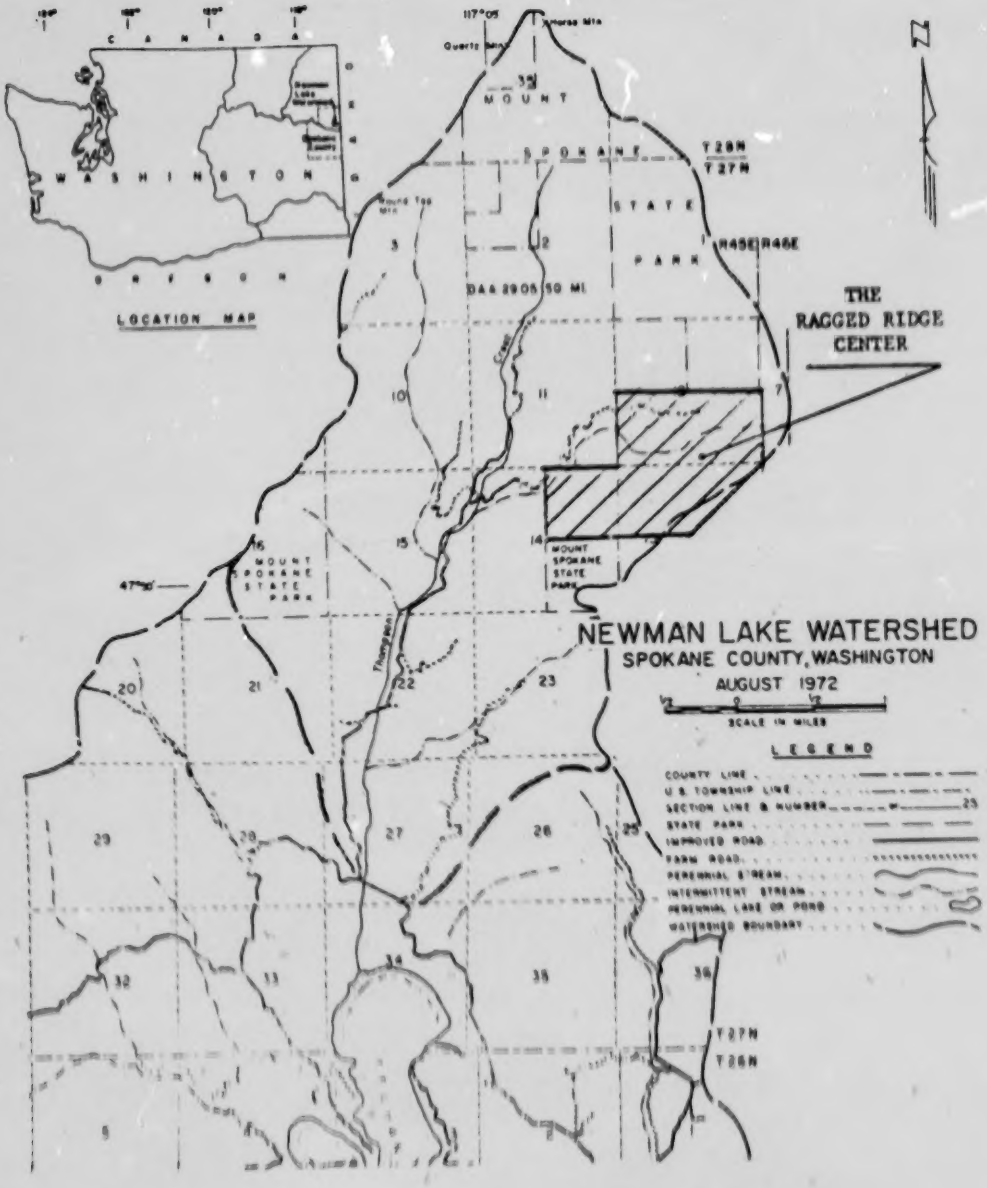

Fig. 2.--The Ragged Ridge Center site, Thompson Creek Drainage, Newman Lake Watershed, Washington. ADAPTED FROM: U.S. Department of Agriculture Soil Conservation Service watershed project map.

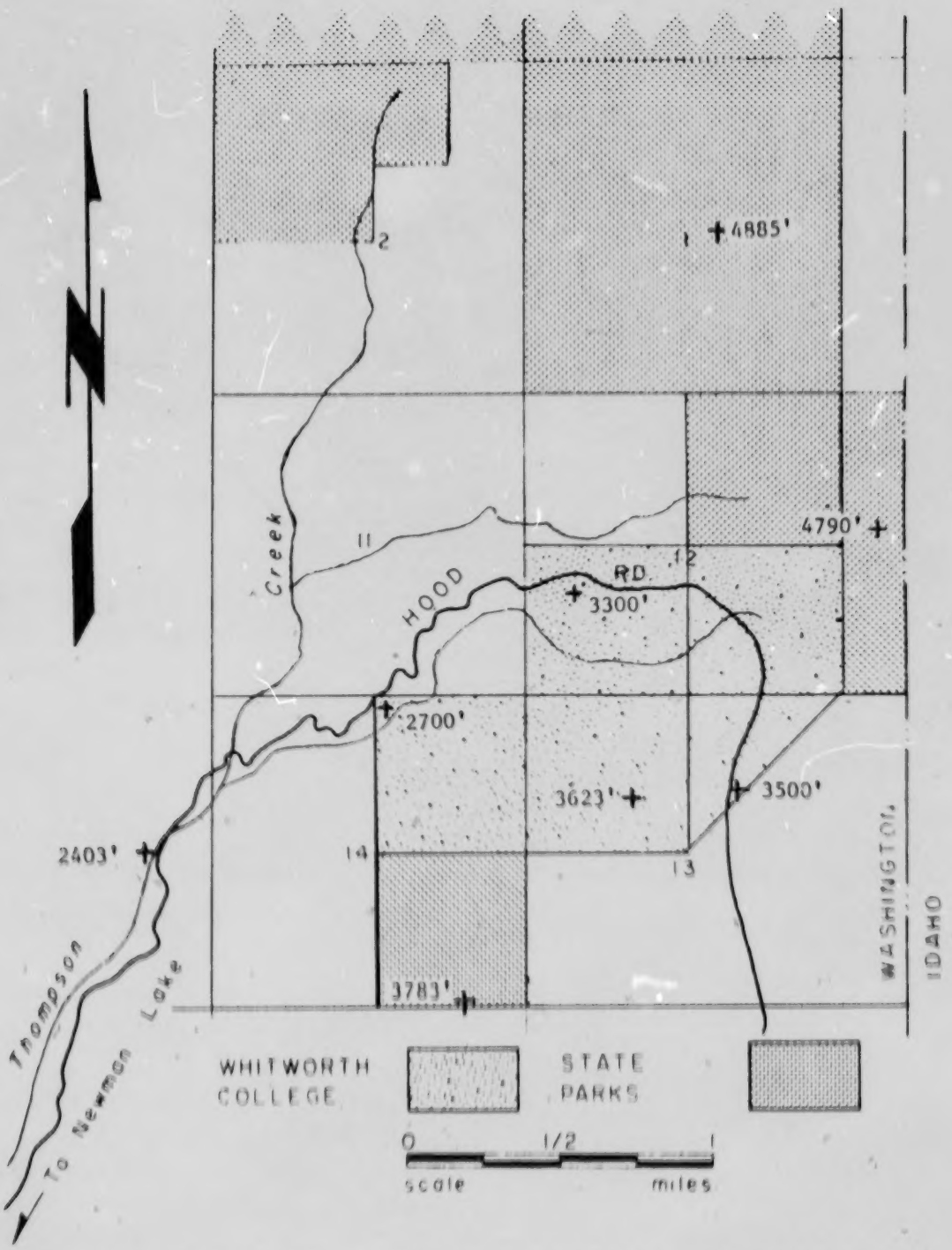

Fig. 3.--The Ragged Ridge Center site in relation to Washington State Parks lands. ADAPTED FROM: Washington State Parks and Recreation Commission Environmental Learning Center map of June 24, 1976.

Presentation and Commission for Additional Study

The final study report was presented to the trustees and faculty representatives of Whitworth College who confirmed the plan as a realistic basis for a further study by Whitworth College itself.

CHAPTER 2

PHASE ONE OF THE PLANNING AND DEVELOPMENT CYCLE, 1973-1974

Outside Agency Involvement

The first study concluded that further development must involve people with experience in many fields. Since the project centered around a land development and management problem with education and recreation as major components, contacts were made with the pertinent state and federal agencies.

Washington State Parks and Recreation Commission

One of the first agencies to be contacted was the State Parks and Recreation Commission because along with outdoor recreational elements, the Ragged Ridge property adjoined several thousand acres of undeveloped Mt. Spokane State Park (Fig. 3).

Although the State Parks was not able to assist directly with personnel or other resources, it was able to help in one significant way. A quarter section (160 acres) of land in the same 900-acre drainage as the Ragged Ridge property was withheld from ongoing pending trades of isolated parcels of state lands. This insured that Mt. Greene and its northern slope (which dominated the visible landscape to the south) would remain in its wild state.

The National Park Service

The National Park Service (NPS) was found to be conducting basic research in education through their National Environmental Education Development (NEED) program,[1] and the establishment of the National Environmental Study Areas (NESAs),[2] and the National Environmental Education Landmarks (NEELs).[3]

This promotion of nationwide environmental education concepts, along with their traditional historical and natural area interpretive services, provides integrated programs of education in the out-of-doors. The National Park Service considers this package a model program for teaching and learning the structure of an environmental ethic, kindergarten through the 12th grade (Dunmire 1975).

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[1]NEED: . . . a process for developing environmental awareness, understanding and values through use of existing curriculum of participating schools. Designed as a kindergarten through 12th grade program, it emphasizes awareness through inquiry, wise management of our resources, and development of a personal environmental ethic (U.S. Department of the Interior, GPO 1971, 0-448-483).

[2]NESA: . . . A different kind of environmental learning experience that makes imaginative use of both cultural and natural worlds, as they combine to make up the study areas. The areas, together with the study guide materials developed for the area and the regular school curriculums, help students relate to their world. . . . (U.S. Department of the Interior, GPO 920-555).

[3]NEEL: . . . nationally significant environmental study areas with exemplary environmental education programs and capable of providing technical assistance to those engaged in developing environmental education programs (U.S. Department of the Interior, GPO 920-555).

This contact led to other agencies and facilities pertinent to the Ragged Ridge project.

Washington State Office of Superintendent of Public Instruction

Meeting with the State Office of Superintendent of Public Instruction (OSPI) personnel revealed involvement in several state and regional environmental education programs. One important program was the operation of the Cispus River Environmental Education Center by the OSPI. Dr. Louis Bruno, then Superintendent of Public Instruction, said this upon establishing the state-operated Cispus River Environmental Education Center:

> Education, particularly environmental education, is our goal. Rather than providing a playground, a recreational facility, a park or campground, the goal is education (Washington State Superintendent of Public Instruction 1972:2).

Information obtained in visiting the Cispus River Center helped form the basic philosophy and future facilities planning patterns for the Ragged Ridge project. These included the idea of study trails, mechanisms for handling school class visits, and the downplay of "organized" recreation programs. Having teachers lead their own environmental study classes (rather than onsite staff teaching specialists) seemed particularly suitable to the Ragged Ridge project.

The Cispus River Center also had a strong college affiliation (Central Washington State College) for program assistance. In addition, the Cispus Center offered residential

facilities for visits of several days: also a goal of the Ragged Ridge project.

United States Forest Service

The U.S. Forest Service Experiment Station, Portland, Oregon, supplied the Ragged Ridge project their Investigating Your Environment (U.S. Department of Agriculture, undated) activity guide materials in environmental education.

Washington State Department of Natural Resources

Meetings with Department of Natural Resources (DNR) officials provided contacts with district and local DNR personnel and direct help with trail planning, erosion control, fire control practices, fire road maintenance, and forest management. In addition, the DNR provided large-scale aerial stereo photos and large photo maps of the Newman Lake watershed.[1]

System Objectives

The information provided by the contacts above demonstrated that state and federal officials were doing much on behalf of environmental education. It also helped provide the basis for formulating the following set of Ragged Ridge Center project system objectives:

1. Provide suitable site and facilities for outdoor classroom experiences where teaching/learning can take place in a conducive and motivating atmosphere.

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[1] In a similar way, owing to the U.S. Department of Agriculture Soil Conservation Service Newman Lake Watershed Plan (1974), the Soil Conservation Service in Spokane later supplied detailed information about the Ragged Ridge area, including watershed maps, surveys of wildlife, vegetation, and provided the project with other valuable consulting service.

2. Bring educational curriculum programming into balance with the environmental characteristics of the Ragged Ridge outdoor classroom site.

3. Enlist the support of the community to help develop the site and program.

4. Foster material and program projects to enrich the outdoor classroom experience.

These objectives have provided the structure within which all development has taken place in the Ragged Ridge Center project (see Fig. 1 and Appendix B, Fig. 13).

Preliminary Study Trail Locations, Fall 1973

The Ragged Ridge Master Plan (Fig. 4) shows that the spring 1973 study trails, with their rather rigorous and isolated perimeter hiking trails, were more suitable for recreation than education. Except for the trailside shelter-classroom idea, original trail planning work had little value for an environmental education system. Therefore, Washington State University students, teamed with a Department of Natural Resources trail planner in the fall of 1973 for new trail studies.

With the use of stereo air-photo techniques, a new exploratory investigation was made using education and habitat diversity as location criteria for establishing study trails. The new emphasis was on exposing various forest habitats to efficient trail locations whose grades would be suitable for school class use (Fig. 5).

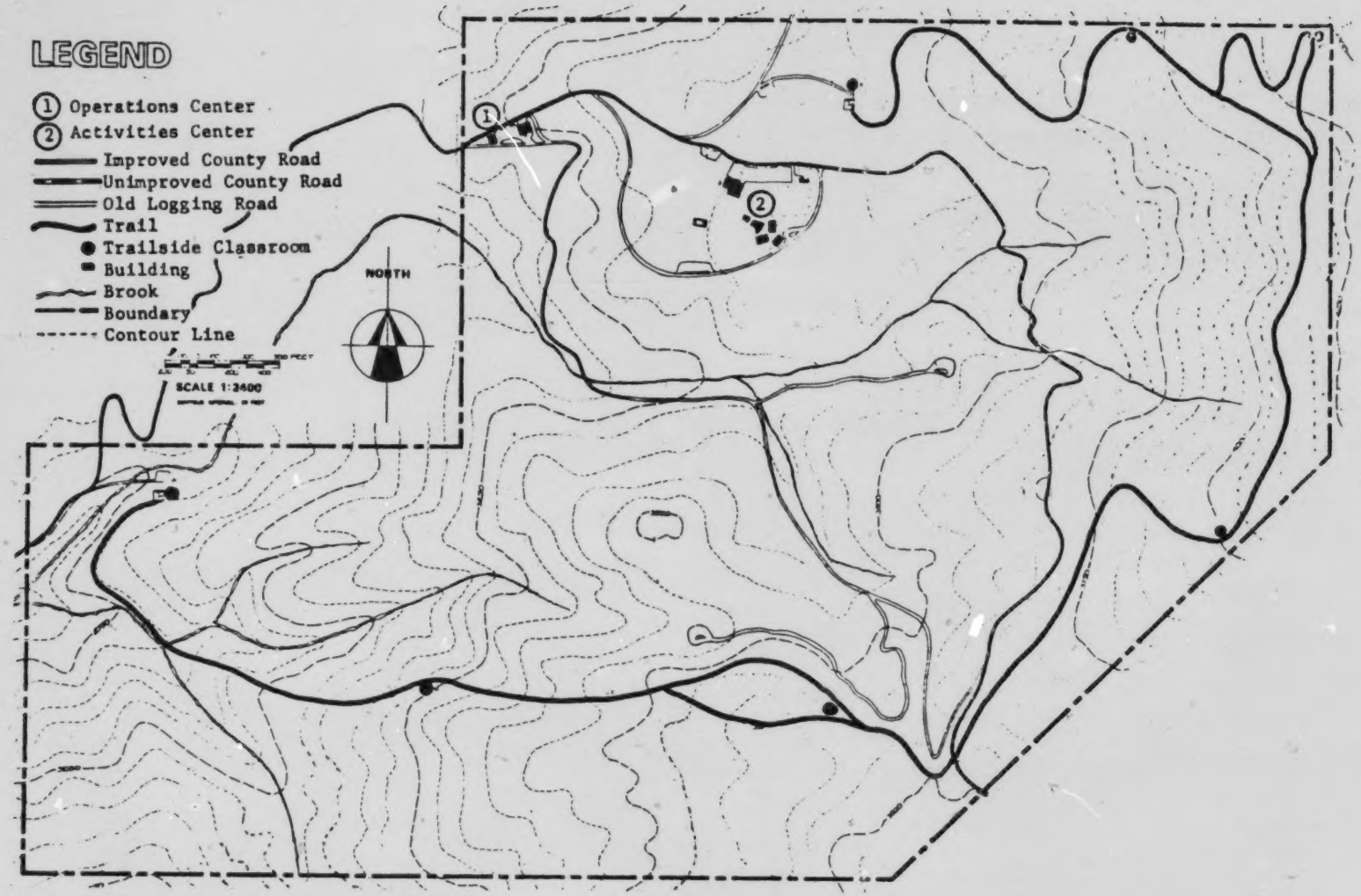

Fig. 4.--Composite master plan map for the Ragged Ridge Center site, spring 1973

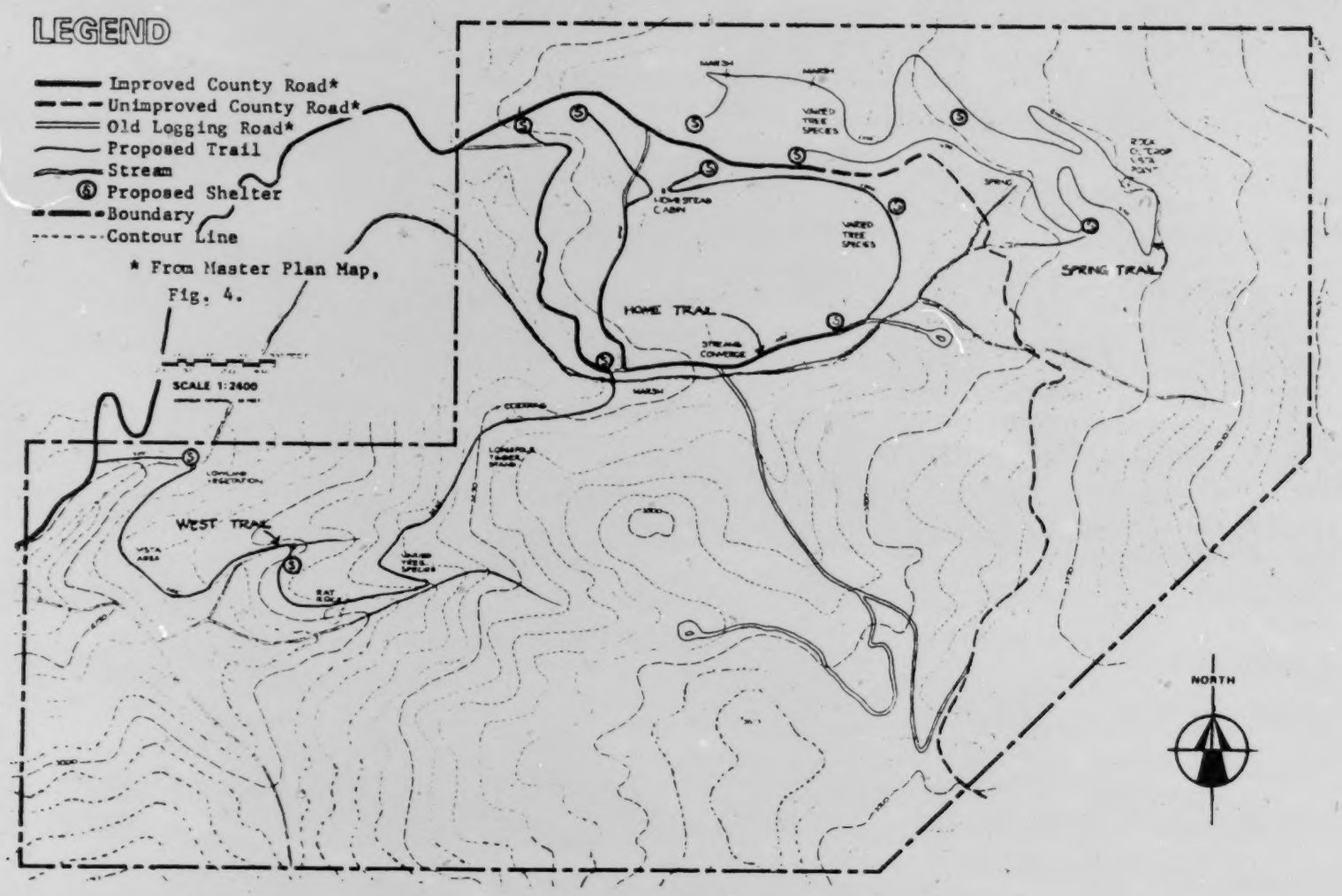

Fig. 5.--Preliminary study trails map for the Ragged Ridge Center, fall 1973.

Interest by Public Schools and Curriculum Writing

Although community leaders had suggested that the Ragged Ridge property be used in some educational way, no direct contacts had yet been made with Spokane area educators. For the project to become financially self-sufficient, area educational institutions would have to make early commitments to the concept and plan, at least in principle.

Meetings were set up in late summer and fall of 1973 with seven key school district administrators and the superintendents of the five-county Intermediate School District No. 101 (later renamed Educational Services District). These officials represented over 90,000 students (Prater et al. 1973b:6). The seven key school districts alone represented 65,000 students. Discussions were held with the district superintendents concerning the creation of an environmental education center including special program materials. It was found that existing environmental education programs in the districts consisted mainly of short field trips by a few classes. Two of the districts offered a one-time overnight experience to developed lake campsites for several sixth grade classes. No programs were available for all grade levels.

The discussions culminated in a positive but cautious response, and Whitworth was encouraged to continue its work.

As part of the schools' response, the superintendents asked approximately 50 teachers interested in environmental education to attend a Ragged Ridge project workshop. Consultants from the State Parks, the Office of Superintendent of

Public Instruction, the Forest Service, and the National Park Service provided in-depth information and guidance. At the end of the session, teachers were extended an invitation to attend an experimental tuition-free course in environmental curriculum building centered on Ragged Ridge property.

One of the course objectives was to produce a preliminary curriculum manual for the Ragged Ridge Center for early school district review. By mid-March 1974 the manual was printed. It included 56 activities in the natural sciences, humanities, and social studies.[1]

Copies of the manual were distributed to area school administrators. After inspection, the school districts encouraged Whitworth College to continue. This, along with an unexpected $5,000 gift, provided the stimulus for the summer 1974 program. With this progress, Whitworth officials funded the Ragged Ridge project for the fiscal year July 1974 to June 1975 and hired the author as full-time director.[2]

Site Activity, Spring and Summer 1974

In May 1974, a forest survey to establish the north and west boundaries and provide internal baselines was contracted

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[1]An environmental curriculum activity is a succinctly written guide for a teacher to use in teaching an environmental concept. In the Ragged Ridge Curriculum Manual the activity has a number, a title, NPS STRAND teaching/learning objectives (Appendix D.1), specific objectives and suggestions for presite, onsite, and postsite procedures. Samples of Ragged Ridge curriculum activities are in Appendix D.2.

[2]By this action the author was made responsible for all phases of the project, including providing inservice course instructors, setting up and operating teacher workshops, written materials, designing new inservice and undergraduate courses, and teaching courses not directly related to curriculum building.

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for (Fig. 6). These baselines were needed for reference in locating physical features. The baselines were located perpendicularly to the northern property lines, spaced four chains (264 feet) apart and coincided with the center lines of 4 x 10 chain rectangles (4 acres). Stakes were driven every two chains (132 feet) along these baselines and marked according to their grid designations. From these stake locations it was possible to locate and return to any point within the 364 acres in the grid.

As an example, the point shown on the grid map (Fig. 6) is labeled A 14 03 W 08, which represents a point in row A, strip 14, three chains along the line from the northern boundary, and west of the baseline by 80 feet.

This grid system was used by inservice summer school teachers,[1] using an inventory instrument (Appendix C.2) as a base to survey and classify curriculum elements (i.e., objects, phenomena, and situations). In addition, trail locations and other features could be identified.

The inventory was conducted after teachers received instruction in the terrain, the grid system, compass, and the inventory requirements. The teachers, working in natural science, humanities and social studies teams, located the features and phenomena within their areas.

These findings resulted in specific curriculum elements at known locations which were assigned a value judgment factor

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[1]Ed 577--Field Work in Environmental Curriculum Writing.

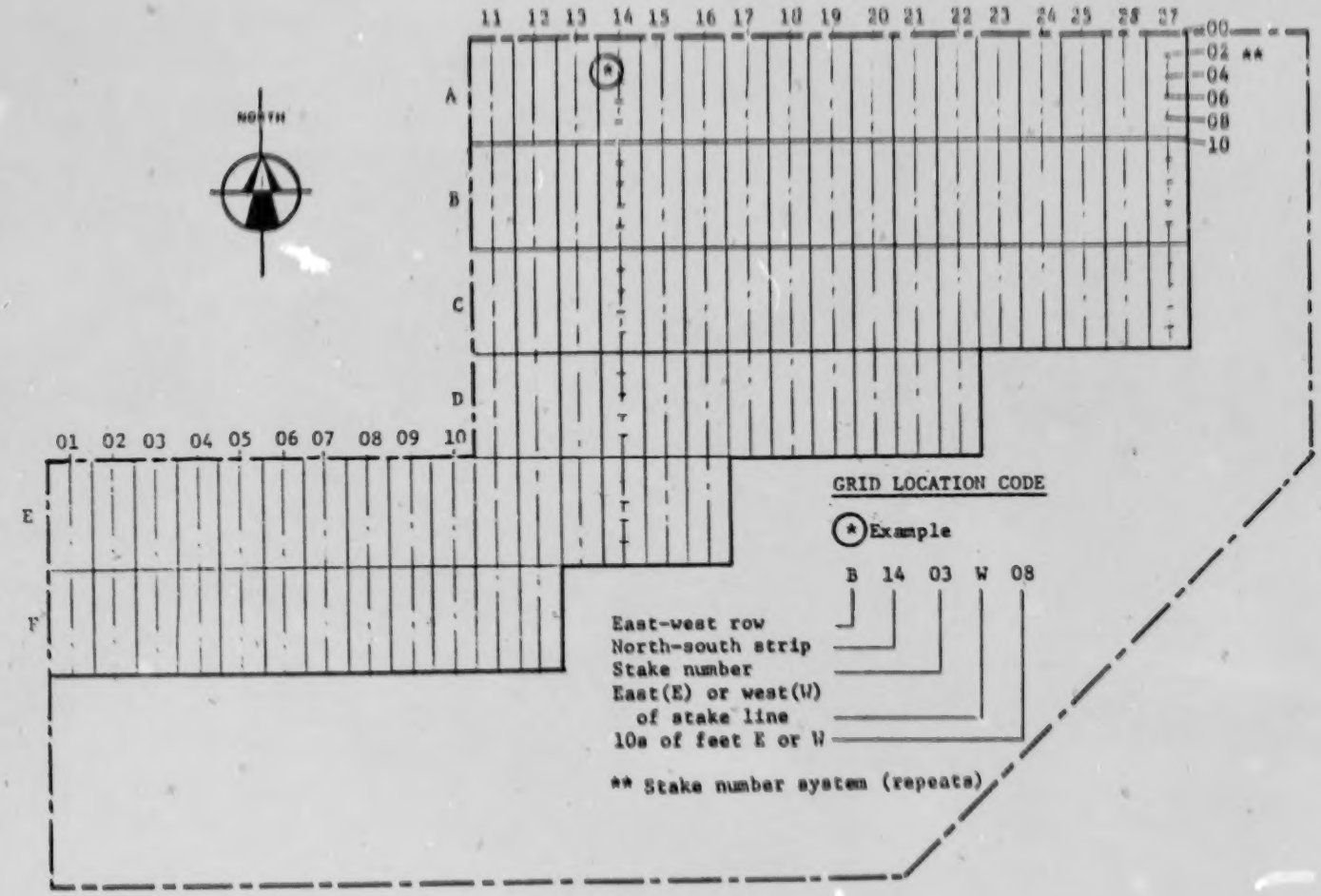

Fig. 6.--Curriculum element location grid established at the Ragged Ridge Center site.

from 1 to 5. The scale was: (1) a very rare contribution, (2) an exceptional contribution, (3) routinely useful, (4) most likely useful, and (5) might be useful. In addition, each 4-acre rectangle was characterized for unusual contribution such as "an interesting landform," "particularly good stand of trees," "a place of beauty," "outstanding vista," or whatever. The survey sheets were turned in and filed by discipline and location code for future curriculum writing use.

As a final operation, the teams transferred their findings onto transparent plastic overlays of the same size as a gridded base map. Using a color code for each discipline, the best three value judgment factor numbers (i.e., 1-3) were drawn at the curriculum element locations. In the same way, the most significant 4-acre sections were cross-hatched onto the overlays. By superimposing the three overlays over the base map, the concentration of the best curriculum elements and areas could be observed. By consensus, the students agreed that lines drawn through these clusters of elements and areas would form optimal trail locations.[1] Figure 7 shows the new locations. On the basis of this work, the trails were flagged for construction.

School Classes Participation, 1974

Ten classes of elementary age children and a class of mentally handicapped children participated in a fall 1974 pilot

[1]Note that the preliminary trail locations of the Department of Natural Resource planner and Washington State University students of the previous fall (see Fig. 5) closely correlated with the new locations.

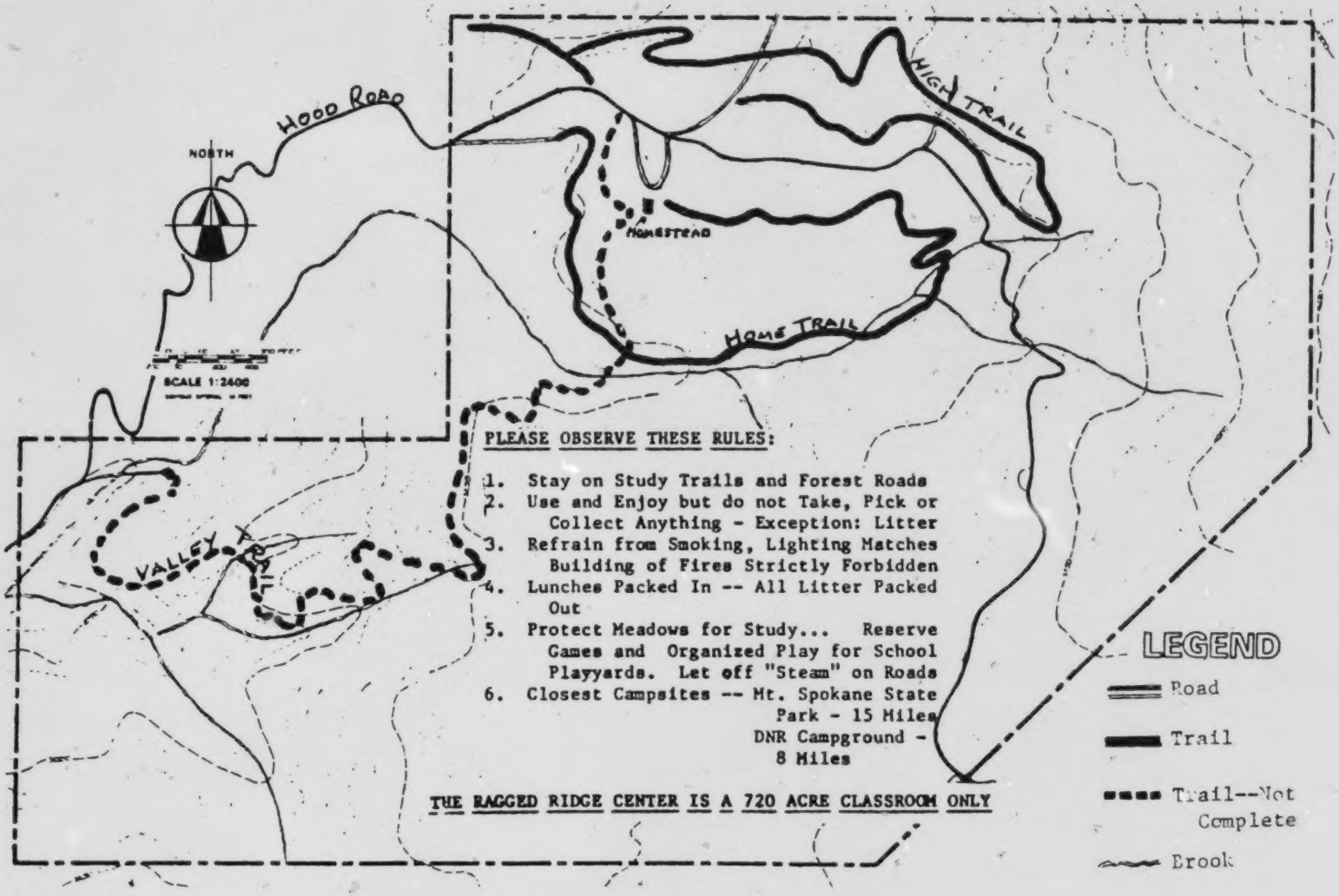
HOOD ROAD
NORTH
HIGH TRAIL
HOMESTEAD
HOME TRAIL
SCALE 1:2400
VALLEY TRAIL
PLEASE OBSERVE THESE RULES:
1. Stay on Study Trails and Forest Roads
2. Use and Enjoy but do not Take, Pick or Collect Anything - Exception: Litter
3. Refrain from Smoking, Lighting Matches Building of Fires Strictly Forbidden
4. Lunches Packed In -- All Litter Packed Out
5. Protect Meadows for Study... Reserve Games and Organized Play for School Playyards. Let off "Steam" on Roads
6. Closest Campsites -- Mt. Spokane State Park - 15 Miles
DNR Campground - 8 Miles
THE RAGGED RIDGE CENTER IS A 720 ACRE CLASSROOM ONLY
LEGEND
Road
Trail
Trail--Not Complete
Brook

Fig. 7.--Study trails map for the Ragged Ridge Center site, 1975.

test of the program and site. Curriculum activities were selected from the newly published 1974 Ragged Ridge Curriculum Manual (Prater 1974a). Whitworth education students assisted the school classes through their first field experience course.[1]

Participating teachers attended a workshop in curriculum materials and site orientation.[2] Consultants from the Office of State Superintendent of Public Instruction and the National Park Service assisted. The goal was to have each teacher write a class lesson plan for an entire day onsite. Parent helpers were given orientation at the Center. Prior to the field experience, the public school students were instructed in the curriculum activities and other expectations. Enough teachers, aides, and parent-helper leaders were trained to keep the instructional group size to six or less.

Before the class visits, the mountain road was graded, rental toilets were installed, and arrangements made for a sheriff's patrol car to convoy private automobiles.[3]

No trails had been constructed in 1974. Therefore, the forest roads, meadows, and spring and creek areas were used as teaching/study locations, all in close proximity to the Homestead House. One class a day was allowed to use the site so the teachers and students would not be subject to more distractions than normal for a first experience. This also allowed more detailed observation for evaluation.

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[1] Ed 450--Field Work in Environmental Education.

[2] Ed 579--Workshop in Environmental Education.

[3] Large school buses could not easily manage the turns on the last 2 miles from Thompson Creek (see Fig. 3).

After holding postsite class sessions, the teachers and Whitworth College students filled out and returned curriculum activity evaluation forms (see Appendix C.4), along with written critiques covering the total experience (see Appendices A.2 and A.3). This information has been used to (1) improve the Ragged Ridge Center operations, (2) help improve visiting classes' behavior, and (3) provide guidance for improving curriculum. It was particularly valuable in planning for the new Ragged Ridge Curriculum Manual published in the following summer (1975).

Trailside Shelter-Classrooms

In the preliminary study of spring 1973, the idea of trailside shelter-classrooms was mentioned: ". . . educational facilities could be centered about a system of nature trails with several outdoor classrooms nearby the trail . . ." (Prater et al. 1973a:9).

Class experience, evaluations, and critiques showed the desirability of an occasional covered structure to protect students from inclement weather and provide a place to rest, reorganize, discuss, work on problems, etc.

To start the trailside shelter-classroom design process, a Washington State University junior architecture class project was arranged. Early in the fall of 1974, 60 students and their instructors visited Whitworth and the Ragged Ridge site for informational discussions and data gathering. Representatives of the Soil Conservation Service, the U.S. Weather Bureau, the

Spokane County Health Department, and the director acted as resource persons. Soil characteristics, wind/snow loads and other climatic information, and sanitation and terrain features were reviewed. The students were divided into 12 five-person groups. Each group was assigned a particular trailside shelter-classroom location. From this, designs were created and judged with one of the winning designs shown in Fig. 8.[1] The winning students produced specifications, detailed drawings, and scale models by the end of the fall semester 1974. These were turned over to Whitworth College for construction purposes.

This brought to a close the preliminary planning and development phase of the project. The final development and implementation phase of 1975-1976 would be built on the plans and experience of the previous two years.

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[1]The 60 designs were adjudicated by two panels of judges: the architectural professors, and a group of professionals with scholastic interest in the project. The latter included a high school biology teacher, an elementary school teacher, a mountaineering professional, a forestry department instructor, a graduate student in forestry, and the director.

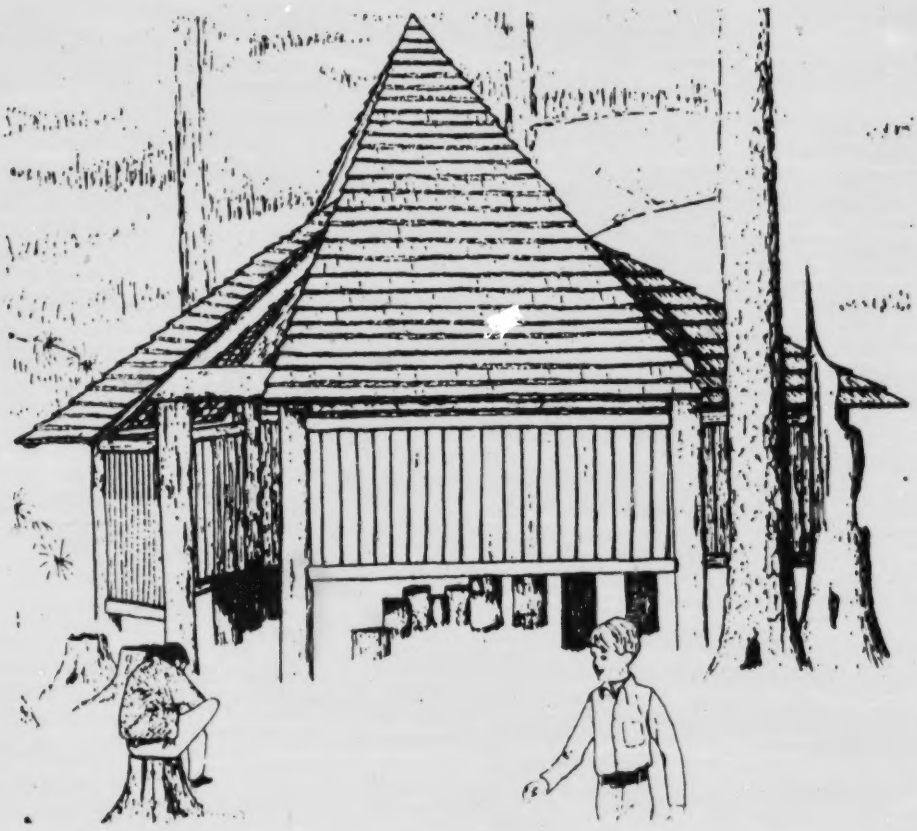

Fig. 8.--A trailside shelter-classroom design

CHAPTER 3

FINAL DEVELOPMENT AND IMPLEMENTATION PHASE, 1975-1976

Curriculum Writing

Review of the 1974 Ragged Ridge Curriculum Manual had disclosed weaknesses, such as in organization and quality of activity objectives, so an entirely new manual was published in the summer of 1975. To do this, approximately 400 activities for the Ragged Ridge site were written which were more complete and considered better quality.

Two volunteer teacher panels were formed to advise on which of the curriculum activities should be incorporated in the new publication.[1] These teachers also suggested ways in which the activities could be organized and presented in the Manual. This procedure, using the teachers' point of view, provided a reasonable short-range substitute for long and expensive curriculum activity testing.

A separate Teachers' Guide (Norton and Prater, 1975) was also recommended. The booklet keyed the more popular

[1] In addition, other inservice teachers worked experimentally on producing multidisciplinary activities for course credit (Ed 583--Problems in Environmental Curriculum Development). These exercises were more in keeping with the Crary (1969) and McInnis (Steffenson 1975) concepts of environmental education. For example, water: it can be taught about in terms of science (a mineral) along with social aspects (washing, drinking, swimming, etc.) and humanities (art, music, etc.) with emphasis on how they interact.

curriculum activities to trail location distance markers for easy location. It also presented information about the site--lists of animals, vegetation, birds, and provided logistical and practical information about getting classes safely and efficiently to and from the Ragged Ridge Center.

For uniformity, curriculum activities were written at the fourth to sixth grade level. For other grade levels, the activities need to be modified by the teachers using them.

With this input, a new 365-page curriculum manual was published in the summer (Prater and Norton 1975). A slight revision was printed in the summer of 1976. Since 1974, over 300 manuals have been distributed both locally and nationally.[1] The indexes for the last manual are included as Appendix D.3.

Site Construction

Early in 1975 discussions about study trail construction were held with the Washington State Parks and Recreation Commission. The State Parks was able to assist and arrange for federal funding through the Department of the Interior and the Department of Agriculture for a Youth Conservation Corps (YCC) effort.[2] Fifty percent matching funds were furnished Whitworth

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[1] National and Canadian recognition of the Ragged Ridge program has resulted from recommendations by the National Park Service in their Trends Magazine (Hinsdale 1975:22), and other publications such as Environmental Education Report (March, 1976).

[2] In the state of Washington, the State Parks acts as administrator of the federally-funded YCC, if work is to be done in conjunction with private organizations such as Whitworth. The state YDCC program charter allows them to work only on public projects, while the YCC will work on private projects with 50% federal and 50% private financing.

by the Hedco Foundation of Oakland, California. Thus, in the summer of 1975 the trails were completed. Financing by the same foundation provided for three additional Whitworth summer employees, and supplies to do the work for which the YCC lacked experience or time.

Lodgepole pine and tamarack were felled, peeled, and dried to provide basic construction materials. This was done in part as a small demonstration thinning project with some assistance from a local high school forest biology class.

Because of a last minute reduction in federal funding for the YCC, only two trails (Home and High Trails) were constructed (Fig. 7). The Valley Trail work was postponed. In trail construction, particular attention was paid to providing a full 3-foot trail tread.[1] Some of the previous alignments had to be modified to minimize environmental damage, yet traverse interesting habitat types.[2]

The Ragged Ridge trail system has stood up well to use, and there has been little erosion. However, final judgment

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[1]The 3-foot wide trail dimension was decided upon to ease the impact of trail building, and to prevent opening up the forest travel way any more than necessary. The more sunlight that hits the forest floor, the more vegetation grows into the trail, causing maintenance problems. Also, small study groups (5-6) would not require wider trails for walking two abreast. The Audubon Society (Ashbaugh and Kordish 1971:22) use trails from 4-8 feet wide because of considerably larger groups accommodated at one time.

[2]Trail Planning, Layout and Construction in Wildland Areas (Prater 1974b) was used as a manual of instruction; it contains much basic information furnished by the U.S. Department of the Interior/National Park Service, Park Practice--Design Manual (1973), Vogel's Trail Manual (1971), and the Washington State DNR's Trail Handbook (1973).

must await heavier use. The carrying capacity and environmental maintenance will be discussed further in Chapter 4.

During the summer, several trail structures were built, including nine bridges ranging in length from 10 to 40 feet, 20 open-air trail pull-off areas with various seating arrangements for students, gate structures, several hundred feet of pole-type fencing, an expandable parking lot, and a 20-foot vehicular bridge. Eighteen routed-type information signs were installed, including the large entrance sign at the main gate explaining the purpose of the Ragged Ridge Center site (Acknowledgments, p. iii).

Negotiations with the Spokane-based 659th U.S. Army Reserve Engineering Company in the spring of 1975 culminated in an agreement with them for constructing the trailside shelter-classrooms as monthly reserve week-end projects. The army was able to bring expertise and equipment for doing the job, including heavy equipment, portable power sources, and small tools. The prototype shelter-classroom was a Washington State University student-designed "A"-frame pole-type structure modified to conform to county building codes.

By permit from the County Engineer's office, the army was also able to do maintenance work on the 2 miles of county road leading into the property.

Further examples of community assistance include the installation of four culverts under the road by Operating Engineering Union Apprentices with the culverts and equipment furnished by the Department of Natural Resources. Several thousands of dollars were saved by using resources of this kind.

Enrichment Projects

As part of the enrichment program, a $2,800 grant was arranged for two Whitworth students for doing a 1975 summer-long botanical study of the Ragged Ridge area. The students collected, classified, and mounted over 250 flowers, trees, shrubs, forbs, mushrooms, and other plant life representing the flora from late spring through late summer. The basic herbarium mountings were catalogued and filed for professional and student use at Whitworth. One hundred of the more popular plants were mounted, under plastic cover sheets, for teachers' use.

A collection of artifacts was made from a homestead area. Additionally, hundreds of slides were taken to chronicle the activities of the Ragged Ridge Center property and to show the details of natural and man-made works. These slides have been filed for use in enrichment programs as required. For example, with these photos, a 3-screen, 25-minute multi-media presentation has been produced to describe the project.

School Participation, 1976

Several public school classes were scheduled into the Ragged Ridge Center in the fall of 1976 for further testing of revised curriculum materials and trail extensions. Again, a teacher and Whitworth student workshop was held.[1] Evaluations and critiques indicated that the program materials and site were compatible.

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[1]See Appendix C.4 for workshop lesson plan form.

CHAPTER 4

EVALUATION OF THE RAGGED RIDGE PROJECT

Although some evaluation is inherent in the previous description of the Ragged Ridge project, there remains the final process of evaluating how the project has met its overall goal to develop the property for benefit of the surrounding community as well as for Whitworth College (see p. 1) and the four system objectives (see p. 16):

1. Provide suitable site and facilities for outdoor classroom experiences where teaching/learning can take place in a conducive and motivating atmosphere.
2. Bring educational curriculum programming into balance with the environmental characteristics of the Ragged Ridge outdoor classroom site.
3. Enlist the support of the community to assist in the development of the site and program.
4. Foster material and program projects to enrich the outdoor classroom experience.

The objectives will be evaluated in three ways by considering: (1) norms in use by other institutions; (2) data and information obtained in the course of the project; and (3) what others say about the Ragged Ridge project. How the overall goal has been met will be discussed later.

Evaluation of System Objective 1

This section will evaluate the Ragged Ridge project in respect to system objective 1, i.e., to:

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Provide suitable site and facilities for outdoor classroom experiences where teaching/learning can take place in a conducive and motivating atmosphere.

Considered for evaluation will be size; natural features and habitats; distance and access; trail and facilities; seasonal availability and maintenance of the environment.

Site Parameters

The research division of the National Education Association (NEA) reported on a multi-parameter statistical study (1970) involving outdoor educational activities in school districts of 1000 pupils or more. A sample of 781 out of 7143 schools that met the minimum requirement of a half-time staff person involved in some area of environmental education was found.

The study reported that facilities ranged from 1 to 998 acres, averaging 145 acres. Of the 214 responding districts, 76.1% traveled to day-use facilities under 200 acres in size. For residential facilities, size ranged from 2 to 8000 acres and averaged 499 acres; 73.6% of 280 responding districts used facilities under 500 acres. Therefore, the Ragged Ridge Center using 240 acres for its day-use activities is considerably larger than the average 145 acres in use for day programs by most school districts. In addition, the total Ragged Ridge area of 720 acres is larger than the reported average of 499 acres used for residential programs. Thus, the Ragged Ridge Center more than meets the size requirements of those school districts responding to the NEA survey.

In other research, Diane Pick (1973) surveyed 101 colleges and university facilities in the United States. She reported on a "composite" university environmental center "averaged" from data furnished by 10 of the schools that met her qualifications for a major environmental education center:

1. In use the year around
2. Had residential facilities
3. Had a director who had as his primary responsibility the administration and supervision of the center
4. Serviced a single institution of higher learning
5. Associated with recreation, outdoor education of related department or division.

Qualifications 3, 4, and 5 are now met by the Ragged Ridge Center. Long-range plans for the college and community include qualifications 1 and 2.

Pick's composite university center is 325 acres in area, "but when combined with usable adjoining public and private lands, more than 1000 acres are available." Since the Ragged Ridge Center's 720 acres also adjoins thousands of undeveloped but usable State Park lands, the Center more than meets college university size criteria. Therefore, the Ragged Ridge Center meets both public school and college/university area standards now in use.

Other use standards in the Pick study show that the relationship between acreage and the number of users at any one time are important:[1]

> A minimum standard of one acre for program, per person at maximum use can be suggested if the center borders

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[1]This is related to the carrying capacity of an area, as will be covered in more detail under "Maintenance of the Environment."

> on private or government lands. . . . otherwise three to four acres should be considered in order to provide greater diversity of natural resources. Persons currently teaching outdoor education centers are strongly in favor of more than one acre as a minimum standard (Pick 1973:18).

The Ragged Ridge Center more than meets the 1-acre use standard because the 240-acre area now in heaviest use at the Center would normally not have more than 180 day-users or more than 120 residential students. In addition, the 720 acres of the Ragged Ridge Center alone would provide the 3 to 4 acres under consideration for diversity of natural resources. Adding adjoining lands could substantially increase the 3 to 4 acres per person.

Given adequate acreage, a variety of habitats within an environmental education center is desirable. According to Helliwell (1976), it is better for a center to be composed of one continuous area covering several ecological zones than for the same area to be made up of fragmented tracts. This is shown in two of Helliwell's diagrams, Fig. 9a and 9b.

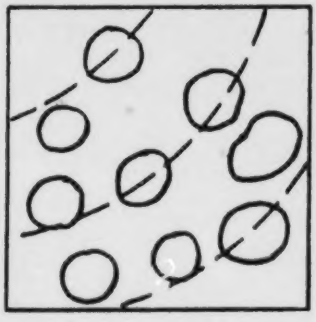

Fig. 9a

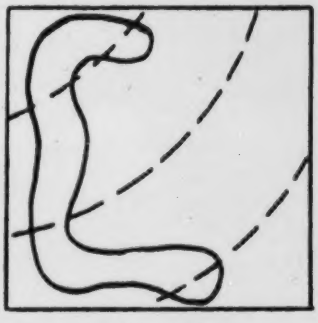

Fig. 9b

Fig. 9.--Conservation study area selection configurations

The lands constituted as in Fig. 9b would be preferable to those of Fig. 9a.

The Ragged Ridge Center has the desired habitat distribution of Fig. 9b, as it spans several ecological zones from 2700-4500 feet in elevation with its variety of habitats. The Washington State Parks and Recreation Commission (1976a) gives the Ragged Ridge Center the highest possible rating on their Environmental Learning Center Facility and Site Selection Report in scoring the Center with "over 10" separate environmental areas.

In addition to proper size and multiple habitats, distance, accessibility and travel time are important for convenient use of a Center. The National Education Association study (1970) reported that for day-use, 82.1% of 524 responding districts traveled 30 miles or less. The average distance was 20 miles and the range was 1 to 225 miles. Of the 421 districts traveling to Centers for longer-term stays (2 or more days), the average distance traveled was 57 miles with a spread of from 1 to 310 miles; 70.1% traveled over 30 miles. The 1976 Washington State Parks and Recreation Commission's rating scheme for Environmental Learning Centers gives a rating in terms of time. A maximum score is given if travel time from major population areas for residential use is not less than one hour but not more than two.[1] For colleges and

[1]The state feels environmental learning centers can be too close to an urban area, as well as too far away for optimizing the total experience.

universities (Pick 1973:16), the "composite" center was found to be less than 25 miles from the school, on the average.

The Ragged Ridge Center is 29 road miles from the center of the regional student population in Spokane. It takes about one hour to drive this distance. The Center is about 30 miles or about one hour from Whitworth College. Considering eventual residential use, the Ragged Ridge Center's location is in line with the distance and time experiences of others. For strictly day-use, the distance exceeds the average travel by 10 miles.

The access road has been a major problem for the Ragged Ridge project, owing to conditions and character of the road.

The Center's main activity area is 5 miles from the nearest hard-surfaced road, which according to the Washington State Parks (1976a) is quite reasonable.[1] However, the Center is 3 1/2 miles from the last school bus stop. The last 2 miles into the Center, although a county road, are not maintained and become a steeper grade of about 10%, with several hairpin turns and a relatively narrow road surface. Large school buses cannot use the road, but smaller cars or bus-like vehicles can travel safely. So far, county officials have been mainly uncooperative in helping to revamp the road. The 659th Army Engineer Reserve Company, Spokane, who have road-building experience, have investigated the road rebuilding as

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[1]The State Parks would prefer that this be not over 3 miles.

a community project. They have found no particular construction problems, but it would be necessary for the county to design and supervise construction.

In addition, weather can hinder access. The snow season for Spokane begins at the end of October and extends to the end of March in a normal year. About 8.7 inches of precipitation falls in Spokane during the snow season, with an average of 53 inches total snowfall at an elevation of approximately 2000 feet (U.S. Department of Commerce, National Weather Service 1973). The weather bureau reports that on the higher slopes and peaks of the mountains (4800-5900 feet), including Ragged Mountain, the precipitation may double. However, the 2 miles of nonmaintained road starts at 2300 feet elevation and is but 3300 feet at the main activity area of the Center at the Homestead Meadow; thus the snowfall on the road is far less than double that of Spokane proper. Since this 2-mile section of road is about 90% on south-facing slopes, melting of snow on the road reduces buildup in the fall and winter and opens the road earlier in the spring. The road cannot normally be considered a severe snow maintenance problem.

In an evaluation of access, it must be emphasized that optimal use of the Ragged Ridge Center for environmental education requires a suitable road.

Property Development

Whether a center can provide environmental education in a conducive and motivating atmosphere depends not only upon

proper size of the site, variety of habitat and access, but also on the site facilities to which curriculum activities are geared, especially the study trails. Along with quality and location of the trails, which have been covered previously, convenient trail lengths are considered important because of attention span, fatigue, and such other factors as physical condition or school time limitations (Ashbaugh and Kordish 1971:21; Usher 1973:257).

Usher, in England (1973:258), surveyed 20 study trails in that country and found the average length to be 1.67 miles. Two were less than 1 mile and two were over 3 miles. By contrast, he found most study (or nature) trails in the United States are about 1/2 mile long.[1] The two Ragged Ridge trails are each approximately 1 1/2 miles long, but each is broken by forest roads or paths leading back to the main road at no more than half-mile intervals (Fig. 7). There have been no known criticisms of the Ragged Ridge trail lengths, which are of these distances in order to cover the various habitats. In effect, however, because of segmentizing, each trail meets the half-mile United States norm mentioned by Usher. For comparison, the main trail (Covell Creek) at the Cispus River Center is about 3/4 of a mile long.

Other facilities include one prototype trailside shelter-classroom and 20 rustic open-air pulloff and sitdown areas along the trails. The trailside shelter-classroom has

[1] The National Audubon Society guided nature trails are up to 1/4 mile long (Ashbaugh 1971:21).

not been evaluated, per se, but use has shown that with the small amounts of precipitation from May to October, the pull-off areas are found to be very reasonable substitutes for more permanent structures. No permanent sanitary or drinking water facilities are installed; they are awaiting heavier use and sustained site supervision.

Seasonal Availability

Most college environmental education centers are in full use for at least 10 months of the year and part-time for the remaining two months (Pick 1973). The Washington State Parks and Recreation Commission (1976b) reported that its Environmental Learning Centers are open the year around. In contrast to these, the Ragged Ridge Center is open seven months, May to October. Until an improved road and other year-around facilities are built, the Ragged Ridge Center will be used for only part of the year.

Maintenance of the Environment

Any given natural area can accept a given amount of interference from man in a given length of time before deterioration sets in (Liddle 1975; Wagar 1974). This is known as the physical carrying capacity. Lime and Stankey (1971) evaluate this carrying capacity for recreation applications in terms of: (1) management objectives, (2) visitor attitudes, and (3) actual impact on the physical resource. These are essentially the same factors that must be considered

for environmental maintenance of an environmental education center.

The Ragged Ridge Center's long-range management objectives have been to provide trails, other facilities and procedures to accommodate up to 30,000 student days per year. This figure is based on an average of 120 students for 250 days without undue deterioration of the environment.

Visitor attitudes for best use of the property are established through the teacher workshop program stressing minimal impact behavior through such points as proper leadership, small groups, stay on trail or road, do not collect, pack-out everything left over, no "horse-play," no overt recreational use, etc.; and through installation of signs. Experience to date has shown this approach to be effective.

As usage increases, actual physical impact is to be minimized by constructing additional trails. Then, one or more trails or trail sections could be unused for up to two years to allow trailside vegetation to recover. Trail wear or vegetation problems have not been experienced to date because of low usage by pilot classes.

In regard to trailside vegetation damage, Liddle (1975) suggests that where vegetation is dense (felt to describe the Ragged Ridge situation), users will normally stay on the trails. The greatest problem is at the places of "rarest species" or popular study points. This is at the trail boundary where people collect and tend to trample vegetation. At such places, trailside edgings using poles, rocks,

or fences are in order. Again, this problem at the Ragged Ridge Center has not been encountered.

There are also social and psychological considerations (Lime and Stankey 1971; Wagar 1974) in maintaining the cultural environment at an environmental education center. The educational experience of any student or group of students can be diminished by overcrowding in the same way deteriorated trails or habitats can affect study. This situation is managed at the Ragged Ridge Center by spreading students out over the trails and study areas. Even with 25 small groups onsite, one group seldom contacts another during the 4-hour sessions at the Center.

Therefore, except for a need for better access to the site, the site and facilities lend themselves to what has been considered by teachers and others to be a conducive atmosphere for teaching and learning (Appendix summaries A.2, A.3; Brouillet 1976; Hinsdale 1974).

Evaluation of System Objective 2

The curriculum-building courses involving local teachers have been described in Chapters 2 and 3. The products of these courses, i.e., curriculum activities for the Ragged Ridge Curriculum Manual, and their use, will be evaluated in relation to objective 2, i.e., to:

> Bring educational curriculum programming into balance with the environmental characteristics of the Ragged Ridge outdoor classroom site.

Many activities are described in the literature for classroom teachers to use in the out-of-doors. By searching out and selecting activities, and then reworking them for individual situations, motivated teachers can put together study units for a specific outdoor classroom area. In contrast to this, the Ragged Ridge materials give the teacher a highly varied selection of curriculum activities[1] that can be used at the Ragged Ridge site. For other sites, the manual becomes a general collection of activities that are helpful to teachers, administrators, interpretive naturalists, and others.

In order to test the validity of the Ragged Ridge Center's approach to environmental education program materials, a survey was made in the fall of 1976. This survey, in the format of a questionnaire, was sent to teachers, school administrators, interpretive naturalists, environmental education specialists, and environmental center directors who had the 1975 or 1976 editions of the Ragged Ridge manuals. The survey focused on their overall reaction to the material and its application to class use.

The survey instrument is included as Appendix C.5 and essentially asks the following two major and subordinate questions:

1. Have you critically read through the Ragged Ridge Manual?
   - A. Yes
   - B. No
   - C. Just looked through

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[1]The 1975-1976 Ragged Ridge Curriculum Manual is composed of 59 activities in the humanities, 36 in social studies, and 144 in the natural sciences. (See Appendix D.2 for example activities.)

And if you have, what is your reaction to it?

A. Liked it
B. Just "so-so"
C. Could be much better

2. Have you or those working with you used curriculum activities from the Ragged Ridge Manual in your own teaching situations?

A. Yes
B. No

And if you have used these activities, were you pleased with the results?

A. Yes
B. No
C. Somewhat

And if you have <u>not</u> used these activities, do you plan to use them within the next year?

A. Yes
B. No

As noted, the first question has to do with the curriculum materials themselves. The second deals with their use. This information has been used to give insight as to how well system objective 2 is being met.

The survey questionnaires were sent and returned[1] according to Table 1. The data have been broken down for analysis in Appendix B, Tables 2 and 3. In addition, written comments have been judged, grouped, and tabulated as to whether positive, some positive and some negative, negative, or omitted entirely.

Analysis of question 1 data (whether the respondent had critically read the Ragged Ridge Manual) shows that of 35 respondents who replied "yes," 34, or 97% "liked" it. Of those

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[1]Manual owners were scattered from New York to Arkansas to Colorado and several other states to several communities distributed over the state of Washington. All but one signed the questionnaire.

50

TABLE 1. Recipients of the Ragged Ridge Curriculum Manual questionnaires, number sent, and returned.

	Number Sent	Number Returned	Percentage Returned
Local			
Elementary teachers	31	21	68
Secondary teachers.....	4	2	50
School administrators.....	3	3	100
Nonlocal:			
Elementary teachers.....	20	13	65
Secondary teachers	2	1	50
School administrators.....	9	7	78
Interpretive naturalists and/or environmental education specialists.....	10	9	90
Environmental education center administrators.....	8	5	63
Totals	87	61	

24 who "just looked through it," 8 of the 10, or 80% who stated a reaction to the question, gave a favorable response. Of the 59 total respondents who either "critically read" or "just looked through" the manual, 42, or 71% had favorable responses. It is not known how many of the additional 14 who "just looked through" without answering further would have had a favorable response.[1]

In summary, the significant information from these data on question 1 is the 97% positive response of the 35 who stated they had critically read the manual, and the 30 of the 38, or

[1]The survey instrument should have specifically asked the respondent to comment further on the "just looked through" category, as well as the "yes" response.

80%, making positive responses. Only 2 of the 38 responses, or 5.3%, commented negatively (see summary of comments, Appendix A.4).

Question 2 concerned the use of the Ragged Ridge activities in teaching situations. Of the 27 respondents who used activities from the Manual in teaching, 24, or 89%, stated that they were pleased with the results. A further analysis of the data (not tabulated in Appendix B.3) shows 26 respondents of the 27, or 96%, also answered "yes" to question 1 on having critically read the Manual. In addition, the one teacher who reported she was not pleased with the results also did not hold a workshop for those assisting her before going into the outdoor class experience (not at Ragged Ridge).

Of the 21 who answered "no" that they had not used any of the activities, 15, or 71% plan to use Ragged Ridge activities in their next year's program. There were 12 who answered "no" who did not indicate their future plans, yes or no. Of the 33 respondents who did not use the materials in 1976 (not counting the 2 who did not answer either "yes" or "no" to the question), only 13, or 39% said they had read the Manual critically. (For summary of comments to question 2, see Appendix A.5.)

Others have also evaluated the Ragged Ridge Center system concept. Hinsdale of the National Park Service (1974) stated:

> Ragged Ridge has the potential to become a national model for the development of regional environmental education facilities. I believe it is already the best existing model of practical implementation of the NEED program.

Following through with these observations, in November 1975 the Department of the Interior and the National Park Service designated the Ragged Ridge Center as a National Environmental Study Area (NESA) for the reasons indicated in the award letter of Fig. 10.

Evaluation of System Objective 3

Much has already been said about implementing system objective 3, to:

> Enlist support of the community to assist in the development of the site and program.

Locally, the support of the program has ranged from noncooperation to full support. The most damaging has been the failure of the county to support the required improvements to the road to the Ragged Ridge Center. However, many county departments have been most generous in their support, including the sheriff, planning, building codes, parks and recreation, health and legal. If one extends "community" to include the state and federal agencies, however, there has been strong support, as has been shown.

The Red Cross has provided Community Health Aide Volunteers for emergency standby service while classes have been attending the Ridge. Similarly, the Audubon Society has assisted in workshop training through their nature education training personnel. Other organizations and institutions have supplied personnel for advisory and policy boards and committees. The Parent-Teacher Associations have not given active support but presentations and discussions have been held with

United States Department of the Interior

NATIONAL PARK SERVICE
WASHINGTON, D.C. 20240

November 26, 1975

OFFICE OF THE DIRECTOR
A98-MX

Mr. Merle P. Prater
Ragged Ridge Center for
Outdoor Educational Opportunities
Whitworth College
Spokane, Washington 99251

Dear Mr. Prater:

I am pleased to inform you that your program at Ragged Ridge Center, as described in your application and curriculum materials, has been found to possess national significance in keeping with the policies of the National Park Service in promoting the purposes of environmental education. Following the recommendation from our environmental education specialists, I have officially declared your site (with its program) as a National Environmental Study Area (NESA).

The NESA program of the National Park Service involves the identification of environmental study areas with active exemplary programs in environmental education that are used by schools and/or other interested groups. These programs are vital to the processes of informing interested citizens about environmental problems; stimulating our youth in establishing values, ethics, and attitudes regarding environmental quality; increasing the users' knowledge of the interrelationships and systems within the ecosystems regarding the total environment; and promoting a desire for action in helping to improve environmental conditions. Each NESA serves as a resource base for students to explore and learn about the environment and their relationship and responsibility to it. Unfortunately, this recognition does not confer protection to a site or any financial assistance. However, as you know, the National Park Service may provide, on request, technical planning assistance for facilities and programs.

At this time I take great pleasure in congratulating you on the merits of your program and in awarding this program the distinction of NESA status. Very soon you will receive an official National Environmental Study Area certificate from the National Park Service.

Sincerely yours,

Gary Everhardt

Director

Fig. 10.--National Environmental Study Area (NESA) award letter.

the Spokane Council of PTA presidents. It is felt, however, with increased dialogue, PTAs would be supportive.

The media have given the Ragged Ridge Center fair coverage through newspaper articles and TV on-the-spot commentary on a class at Ragged Ridge, as well as a studio talk show. In addition to the good publicity by the National Park Service, the Bureau of Outdoor Recreation has requested an article about the Ragged Ridge Center for their publication, Outdoor Recreation Action, based on the common need for good land ethic attitudes in all outdoor activities.

The Ragged Ridge Center has not been supported financially on a direct basis through local campaigns or solicitation except for small amounts where high interest was known (e.g., the botany collection). Requests for local funding have been withheld out of deference to a regular annual all-college fund drive on a community-wide basis.

Evaluation of System Objective 4

System objective 4 states:

> Foster material and program projects to enrich the outdoor classroom experience.

The ongoing projects under this objective, i.e., environmental education curriculum materials, the herbarium, historical artifact collection, children's art, and slide photographic collection, form a base for a continued building of these items. They have not been extensively used to date because there is no environmental education resource center central to most of the public schools in which to house these

materials and collections. At the present time, they are in the Ragged Ridge Center offices on the Whitworth College campus. However, the materials have been heavily drawn upon by inservice curriculum building classes.

CHAPTER 5

OBSERVATIONS AND CONCLUSIONS

The discourse of the preceding chapters describes and evaluates the four-year accomplishments of the Ragged Ridge Center project in developing an environmental education system. It has been shown how a Washington State University student project in 1973 grew into the full scale Whitworth College Ragged Ridge project. By 1977, the basic site, program, community and enrichment functions of the system had been implemented and evaluated. Left to be answered is the question as to whether the overall goal of "benefitting the Whitworth College and the surrounding community" has been met.

Benefit is defined as "useful aid:HELP" (Webster's Seventh New Collegiate Dictionary, 1965). As such, the conclusions regarding the Ragged Ridge Center project will be discussed in terms of how the project has helped the college and the community.

Benefits to Whitworth

A college has several interacting dimensions. The benefits of Ragged Ridge project will be discussed in terms of these dimensions, which for this thesis will be limited to:

1. Operational personnel--trustees, administration, faculty, and staff who provide the guidance, knowledge, and physical base.

2. Students who derive and build on the knowledge base during their enrollment.

3. Physical facilities to provide areas for study, living, and leisure time activities.

4. Philosophy of the institution within which the college community operates.

5. Public's perception about the school: what it stands for, etc.

A sixth dimension, finance, permeates the other dimensions. Most small liberal arts colleges have had to operate under spartan financial situations during the past few years. Whitworth College has been no exception and, as will be seen, financing has had its effect upon the Ragged Ridge project.

Operational Personnel

The author has observed that Whitworth College people, including the trustees, administration, faculty, and support personnel, have had genuine but mixed feelings concerning the Ragged Ridge project.

It has been shown that the project started more as an experiment than as something planned for and embraced by the different segments of the institution. With encouragement, however, the WSU student Ragged Ridge Planning Unit evolved into the Ragged Ridge Center pilot project to meet the overall and system objectives. However, even from the earliest dates, there have been three distinct reactions to the project: (1) those who were enthusiastic, (2) those who were reticent (or, perhaps even opposing the project), and (3) those who would just "wait and see" or be neutral.

The all-important faculty blessing for an environmental education project has been ambivalent. Individually, many have been understanding, but gave the Ragged Ridge project low priority when faced with mounting departmental budget and staffing problems.

Several key faculty have readily identified with the advantages of environmental education in respect to the teaching/learning process. Most, however, consider the Ragged Ridge Center project as just a place to go for emphasis in special areas such as botany, ornithology, entomology, geology, or perhaps, art. They do not look on the Center as a place where art could be infused with history or a place to show how biological processes affected the living habits of the homesteaders, etc.

In all fairness to the Whitworth faculty, their reaction is not unusual, even without the financial problems indicated. Albers (1974) reported on difficulties in handling interdisciplinary problems in a college atmosphere. Christman (1974) and Buchtel (1975) and others have also commented on this same and related problems. College environmental programs are usually handled in one of two ways: (1) as a department pulling on all departments for courses, or (2) as a separate autonomous college within the school. Each has its advantages and disadvantages. Both seem to have difficulties in being integrated into the structure of the schools. The departmental route depends on much cooperation between traditional departments (which can be difficult) and the second, because of its autonomy, is often

criticized for duplicating courses in other departments. The Ragged Ridge Center falls closest to the autonomous college concept in administration, but owing to lack of personnel and funding, has worked through traditional departments, especially education.

In any event, a solid faculty base has not developed at Whitworth for its own internal program of environmental education. However, as an example of cooperation, the curriculum committee, composed mainly of faculty members, has approved courses in environmental education as designed and taught by the author. Whitworth does offer, however, an area of concentration[1] major in environmental studies.[2]

Students Benefitted

The students interested in environmental areas, with whom the author has been in contact, tend to be idealistic or

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[1]The area of concentration is understood to be a thematic or topical approach to liberal education which may cut across disciplines (Whitworth College 1976a:36).

[2]Environmental studies differ from environmental education in that environmental studies put courses of study together with more of a technical and scientific base (i.e., biology, chemistry, political science, economics, etc.) and deals more directly with matters and problems of the physical environment (see Appendix D.4 for a description of the Whitworth area of concentration major in environmental studies). This viewpoint is backed up by Steffenson (1975) who attributes the following to Noel McGinnis (see also Appendix A.1):

> Environmental education is a way of teaching and learning. . . . No subject is more environmental than any other subject . . . . What ultimately makes education environmental is not its subject matter but its procedures. . . . It is only when the educational experience incorporates the dynamics common to other environmental processes that it can truly be called environmental (1975:10).

activist types and are in the minority. The great bulk of the student body are not too interested in environmental affairs. Relative to this, a National Park Service (NPS) environmental specialist has told the author privately that the NPS has found even at the secondary school level, working toward a stronger environmental ethic has little student interest. Even where college and universities have supposedly strong environmental programs, many frustrations occur to students who try to major in this area (Stockholm 1974).

Most students, along with others, do not perceive environmental education as being more than a "nature walk" or something to do with pollution prevention lectures and cleanup campaigns. The interdisciplinary notion of the total environment involving not only science, but also the humanities, social studies, and language arts appears to be a revelation, even to the most environmentally minded students. To fill some of this void, the author designed course syllabuses and has taught two courses in environmental education, primarily for preservice teachers at Whitworth[1] (see course descriptions, Appendix D.5). Observation and reaction papers in these courses show that students do sense the deeper ramifications of environmental education as a basis for motivational teaching and learning.

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[1]It is emphasized that environmental education does not particularly advocate new and special courses but is primarily an attitude on the part of instructors when teaching conventional courses. Some awareness and utilitarian courses, however, are called for.

In 1976, the author sensed this overall need for a new major for preservice teachers. Working through the Education Department, he was instrumental in getting Whitworth and the State Certification Committee to approve an Area of Concentration as a major for elementary education teachers.[1] This was based on some of Crary's teaching/learning concepts (1969) for breadth of course offering and the Loret model (1974) for completeness of courses with breadth. Mr. David Kennedy, consultant to Whitworth, in suggesting Crary's approach, has recommended that preservice elementary teachers taking this area of concentration should be required to complete a certain number of courses in each of the following categories: science, aesthetics, utilitarian, and ethical (based on Crary's approach), plus awareness type courses. In conjunction with this, the author suggested combining this with the Loret model, which spreads the required courses over an historical time continuum, i.e., origin of the environment, prehistoric man, historic man, the present, and the future. As a consequence, Whitworth undergraduates can now take this area of concentration in Environmental Education for Elementary Teachers as a major (see description, Appendix D.6). Thus, teachers can be assured of a well rounded course structure (Fig. 11) in subject areas they would be teaching later.[2]

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[1]At Whitworth, preservice teachers take majors in fields other than education, but must take all courses required for teaching certification in the state of Washington.

[2]That is, humanities, science, social studies, and language arts.

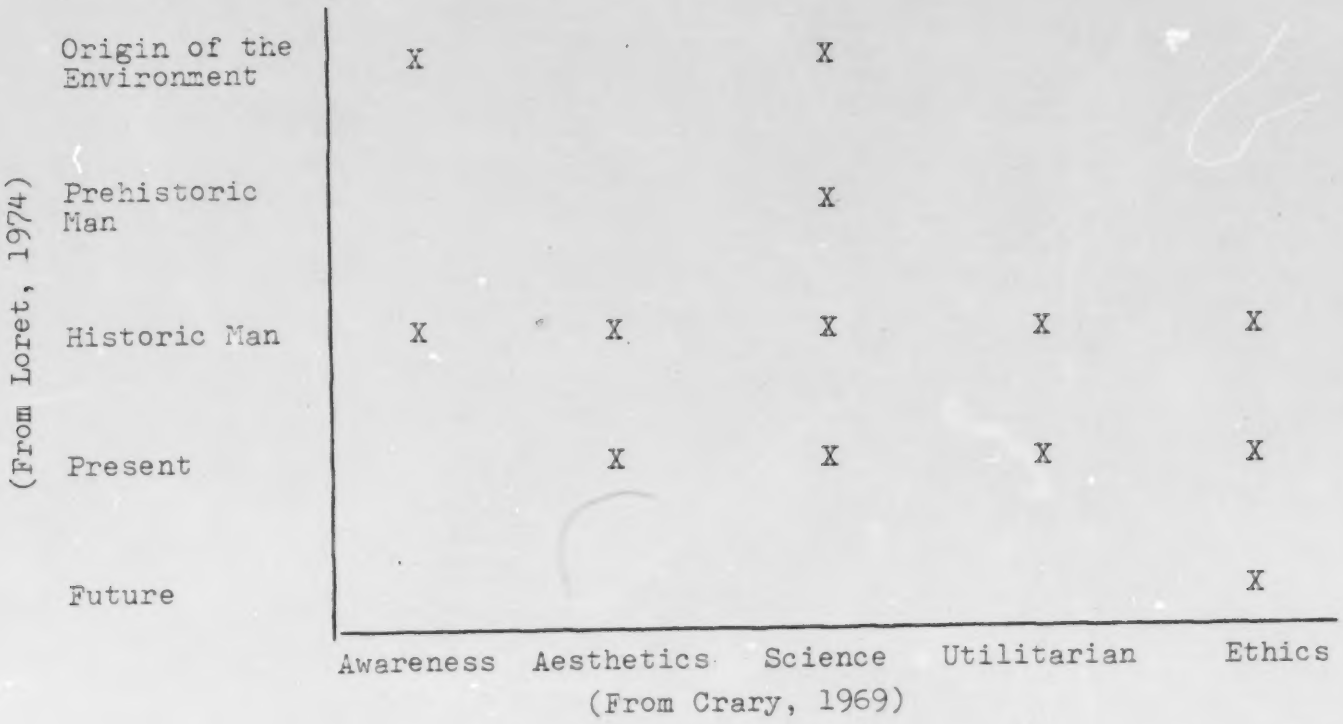

Fig. 11.--A matrix with a hypothetical course distribution for the Whitworth College area of concentration major in environmental education for elementary teachers.

Discussions have also been held concerning this same approach within other majors. In this respect the Ragged Ridge Center project has been instrumental in developing a further quality in the college's course of instruction.

Physical Facilities

The Ragged Ridge Center has not been a part of the physical plant operations of the college. Because of the experimental nature of the project, the center has been considered affiliated with the college only through the Ragged Ridge project. Even though some of the instructional departments use the center on occasion, no budget was ever established to either develop, operate, or maintain the center, as for example, a fieldhouse might be. This type of funding has been separate and handled by the Ragged Ridge Center office. The physical plant personnel, consequently, have had little responsibility for the site or project.

In addition, since no residential facilities exist at the Ragged Ridge Center, there has been little interest (or even much curiosity) on the part of students, faculty, and others. Most college environmental centers are funded partially for retreats and other purposes and therefore, have a much higher profile than if used exclusively for day-use environmental education. Whitworth uses the facilities of other organizations as occasions require.

So it can be observed that in using the Ragged Ridge property with its minimal facilities and for its present

purposes, there would not be a high incentive for the college community to use the Center property. Therefore, direct benefits to the physical plant would be considered minimal.

Philosophy of Whitworth

As do other schools, Whitworth College has its own set of unique characteristics and values which, in essence, define what the college is and what it stands for. In what way does the Ragged Ridge Center project fit in with this set of characteristics?

Whitworth is a Christian college supported in part by many individual churches of a major denomination. Many students attend because of these church affiliations and because there is a spectrum of Christian freedom for believers and as such, students can find the niche (or none) in the spectrum where they are most comfortable. In addition, the individual growth of each student is considered highly important and much time, effort, and budget is spent in making sure that the student attains as much potential as possible. The "whole person" idea is stressed.

The Ragged Ridge Center project objectives are in keeping with the Christian outlook and personal attainment through the "holistic"[1] interdisciplinary approach to education. Those who have become involved in the site and program, whether through formal classes or more informal means, remark

[1]Definition: the theory that whole entities as fundamental components of reality have an existence other than the mere sum of their parts (Random House Dictionary of the English Language 1967).

about the peace and beauty that come from the surroundings of the Ragged Ridge location, thus also supporting the Christian tradition. In these respects, the Center fits into the philosophy of the college and is considered a benefit.

Public Perception of the Ragged Ridge Project

Those who have known the Ragged Ridge program from a distance (i.e., other than the local schools, agencies, and others which have already been discussed), tend to judge the Ragged Ridge Center project more strongly than the college itself. For example, the Washington State Superintendent of Public Instruction, with which Whitworth has had close professional liaison, sees Whitworth College as:

> . . . taking leadership in the Spokane area for the development of curriculum materials and teacher education courses which prepare teachers and students from the Public Schools to use the "Ragged Ridge environmental education center . . ." (1976b:16).

That the site and program have been designated a National Environmental Study Area (NESA) by the National Park Service is substantial evidence that the project is considered viable by a knowledgeable agency. In 1977, the Environmental Forum of Washington for the second consecutive year will be giving scholarships to teachers from over the state of Washington to attend the Ragged Ridge Center summer workshop in environmental education. Reviewers from across the nation have made many positive comments concerning the Ragged Ridge materials as discussed in Chapter 4, tabulated in Appendix B, Tables 3 and 4, and summarized in Appendix comments A.4 and A.5.

Benefits to the Community

The community, in terms of the Ragged Ridge Center project, can be considered regional and involves not only public and private school programs, but character building agencies, other colleges and universities, organizations, and institutions as well. In what way have such groups benefitted?

It has been shown how the different groups have assisted the Ragged Ridge project in one-way-or-another. These are mutual benefits, however. As an example, the Army Reserve Engineering Company, while assisting the project, has been provided active week-end exercises and practice to maintain their own expertise. Similarly, beneficial experiences have accrued to other providers.

A Larger Environmental Education System

A larger potential benefit to the community is developing at this writing. Using the Ragged Ridge Center system as a model, Whitworth has led an effort to put major environmental education sites in the Spokane area (including the Ragged Ridge Center) under one coordinating agency. The purpose is to provide better communications, workshop and inservice course coordination, site class scheduling and efficiency of programming. Under this plan, any environmental study area,[1] whether it be a zoo, museum, downtown retail and commercial district, industrial complex, agricultural area, wildlife refuge, whatever, would be affiliated with the coordinating agency. This

[1]That is, an area away from the normal classroom where students visit.

agency would help each affiliated area provider and educational or agency user by supplying services similar to those of the Ragged Ridge Center system. The Spokane Center for Environmental Understanding, Inc., has agreed to expand their program objectives to incorporate these additional functions for the different environmental areas and users. It is now working on initial funding grants with the goal of being operationally independent of outside grants within three to four years.

At Whitworth's invitation, school district administrators and program personnel, business leaders, and character building organizations and other agency representatives have met and approved the coordinating agency concept and have written endorsement letters to assist in grant funding. The organizational concept is shown in Fig. 12.

The Ragged Ridge Center as a State Parks Environmental Learning Center

As a further benefit to the community, Whitworth is also negotiating with the State Parks and Recreation Commission to assume title of the Ragged Ridge Center site as a State Environmental Learning Center (Tveten 1976; Appendix E.1). If consummated as outlined in the letter of Appendix E.1, the state will not only own the property, but also continue to develop it, including residential facilities,[1] for operating the Center in the same manner as the other 10 Environmental

[1]The residential facilities most likely would not be located directly on the Ragged Ridge site according to tentative plans as of May 1977.

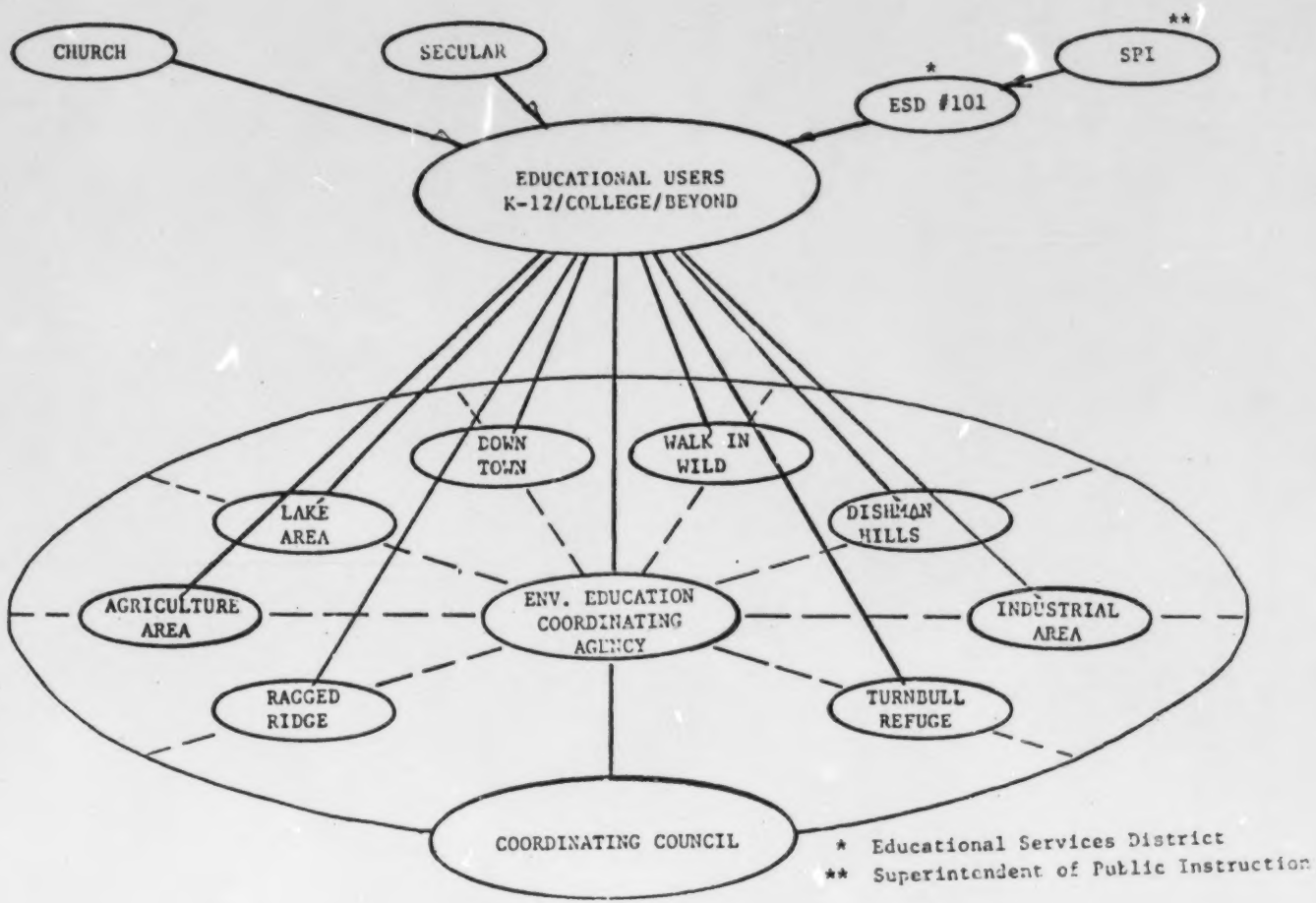

Fig. 12.--Community environmental education coordinating agency chart of relationships.

Learning Centers in the State Park system. Because the Center would have overnight facilities with significantly lower use fees, the entire program affords new opportunities for schools and other potential users. Under this arrangement, Whitworth College would continue to give program support to the Ragged Ridge Environmental Learning Center both at the undergraduate and inservice levels.

The above shows the Ragged Ridge Center project has benefitted organizations and groups within the community as they cooperated with the project. In addition, the Ragged Ridge project has provided the background experience, knowledge and model for a potentially larger operation in environmental education that can reach into all areas of the community and region.

Concluding Statement

Coinciding with the writing of this thesis, the Whitworth College Ragged Ridge Center for Outdoor Educational Opportunities has concluded its exploratory development phase. Further growth of this effort to form a community environmental education system (including the Ragged Ridge Center) depends upon actions by the State and the community.

Many other research and development possibilities could be considered as an outgrowth of the Ragged Ridge Center project: e.g., site projects for rehabilitation of the forest; research on trails as study trails; recreational friction in the area, particularly hiking, biking, snomobiling, crosscountry

skiing and snowshoeing; the failure of educators as a whole to see the advantages and comprehensiveness of environmental education; the relation of the community's overall attitudes and values to the question of "what makes education environmental" (McInnis and Albrecht 1975; book title the same); the pressing for environmental education awareness and advantages in teacher certification curriculums; etc.

As to whether the Ragged Ridge Center project has been a success, only the future can reveal this, using the criteria of interest at the time.

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*Located in Whitworth College Library, Spokane, Washington 99251

APPENDIX A

DEFINITIONS AND SUMMARY COMMENTS

APPENDIX A

DEFINITIONS AND SUMMARY COMMENTS

Appendix A.1. An Approach to Defining Environmental Education[1]

Environmental education is concerned with the physical and cultural environment. Beyond this, a definition is more complex.

The Balarat Center of the Denver Public Schools (Forsythe 1971:8) and Hawkins and Vinton (1973:36) use concentric ring concepts to show some aspects of environmental education by starting with the student in the classroom learning situation, then moving out into the school building, the school site, the immediate neighborhood, the city, suburban areas, rural, region, the nation and on to include the "global village." Study in these areas is quite often associated with science studies, but according to Edward Clark it is quite often wrongly suggested that environmental education deals with just biology, science, ecology, or a nature study and states: ". . . education is environmental when it increases our understanding of the nature, culture, technology, people, ideas and feelings of one's environment" (1975:1). Hawkins and Vinton (1973:35) emphasize the necessity of getting away from the classroom for the learning that can take place in such places as the city streets, the garbage dump, a park, a forest, a river, a shopping center, an airport, an old mill, a battlefield, or any of the thousands of environments around us.

Malcolmb Swan (1975:16) claims the term "environmental education" surfaced about 1968, so the term is new. From Swan, Arnstein (1971:7), Balzer (1971:220) and others, it is

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[1] A paper prepared by Merle P. Prater, May 1977. References Cited are given at conclusion of Appendix A.1.

suggested that environmental education can often be best defined by what it is not so that its entire scope can be perceived.

We learn that environmental education is not "nature education" where some guide or self-guiding leaflet explains what one is looking at, although learning the taxonomy and names of flowers and trees can be a part of environmental education if there is a need or desire to do so.

Environmental education is not just "conservation education" either, which deals with wise use of natural resources including the aesthetic. Conservation classically strives to prevent pollution of our air, water, and land. It desires the best utilization of energy and other needed resources. It deals with finding alternatives to wasteful and destructive processes. And again, elements of all of this can be found in environmental education.

Nor is environmental education just "outdoor education," which is considered an "educational approach or method" (Swan 1975:9), or as Balzer describes it ". . . outdoor education has been seen as education executed under the ideal conditions of the out-of-doors" (1971:221). Outdoor recreation is considered a part of outdoor education. In essence, outdoor education provides the learning climate. The out-of-doors is also the location for much of environmental education but not necessarily so. The school's heating and utility system may also be studied as a part of environmental education.

From the above it can be seen that, in many ways, environmental education involves all of education and especially that away from the normal classroom. It has a strong sense of interdependence and interaction which allows the student a chance to know more about the actual real-life situation in relation to the symbolism of the classroom. It mixes attitudes and values with places and culture. A statement attributed to McInnis by Steffenson (1975) could explain the difficulty of defining environmental education along conventional lines:

> Environmental education is a way of teaching and learning. . . . No subject, as subject, is more environmental than any other subject. . . . What ultimately makes education environmental is not its subject matter but its procedures. . . . It is only when the educational experience incorporates the dynamics common to other environmental processes that it can truly be called environmental (1975:10).

In this respect, a concise definition of environmental education does not really exist which is accepted by the majority of educators. However, it is hoped that in lieu of this lack of definition and from what has been stated, the reader at least understands what environmental education encompasses and thus, if he so desires, define environmental education in his own terms.

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Appendix A.2. Typical Evaluation Comments from Users of the Ragged Ridge Center Curriculum Activities

Evaluation Comments--the Center

". . . The covered shelters which are already under construction will be a welcome addition." (4th grade teacher)

". . . One trail perhaps might have posts with numbers on them that would correspond to a certain section of the book . . ." (5th grade teacher)

". . . Imperative to have more time and additional visits . . . need better maps, identification of trails and markers . . . need for outdoor shelters . . . bus trip long, would like campsite." (4th-5th grade teacher)

"A better viewpoint of the spring without creating so much human effect on the landscape." (6th grade teacher)

Evaluation Comments--Curriculum

". . . Discussion on relation between and dependence of man and his environment well spent." (Lower grades teacher)

"Bird walk--students not only made new friends but learned need for trust of one another and became more aware and appreciative of fine balance that exists between and among themselves and nature." (5th grade teacher)

"The students sat by themselves and listened to the sounds of nature. They compared popular music to the sounds they heard." (5th grade teacher)

"Considering the difficulty our particular group (mentally retarded) had with measurement, utilization of a picture key would be of great help." (Lakeland Village teacher)

Evaluation Comments--Classes

". . . I observed kids light up and ask questions and <u>really</u> want to know. This was exciting. In particular, there were a couple of kids who upon observing them, had seemed rather dull in the classroom but at Ragged Ridge their questions flowed. They were excited to learn." (Whitworth student teacher)

[<u>Sic</u>] ". . . We Sat dow on benches that they made and rote all the sound we heard. It was fun. we saw Deer trakse and tire trakse. We walked on tow (two) brigs (bridges) . . . [<u>sic</u>]." (3rd grade student)

"I would like to see a full time educator and resource man at the site. He could also assist with pre-studies and post-studies in schools." (6th grade teacher)

". . . unwise to lead groups off on same trail at same time." (Lower grades teacher)

Appendix A.3. Typical Comments from Experience Critiques Furnished by Teachers and Others at the Ragged Ridge Center

"The Ragged Ridge Center offers a tremendous variety of experiences in outdoor education. The high elevation, close-in remoteness, and historical values are hard to duplicate in another setting. I won't elaborate on the tremendous potential it offers because you are well aware of them. . . . I wish to express one concept which excites me. The benefits of a daytime excursion are obvious but overnight field trips open many more possibilities. . . . What if Ragged Ridge could develop facilities in keeping with the homestead era? Maybe bunkhouses with lofts for the sleeping bags, old hand water pumps, wood stoves, and other pioneer facilities. The students could actually relive history instead of reading about it . . . in any event, don't "ruin" the center with too much modernization." (6th grade teacher)

"I enjoyed the hiking, fresh air and atmosphere very much. I hope every child in Spokane County has the opportunity to go see Ragged Ridge." (Parent helper)

". . . The learning that can take place there is tremendous. I believe we tried to put more into a one-day session than was good for the kids. When one goes from area to area--subject to subject--as we did the day we were there, you lose track of many things. Even though we were to be there only one day, we should have picked only 2 or 3 things to study, then we could have spent more time and detail on each subject." (6th grade teacher)

[Sic] "I feel that I must give you my direct thanks for the wonderful time we had at Ragged Ridge. On October 7th it was a plesure coming out to sniff the fresh air and hear the music of the crickets and the golden meadows were simply marveless for painting pictures of. The beautiful streams were extravegent for water tests and microscopical and scientifical studies. I feel that this experience with our enviorment may lead to a very big outdoor education to many people of witch went on this educational experiance of the outdoor enviorment. I resent and do not like all the litter of witch there was not very much but I still don't like it. The goverment should hire a voluntary clean up crew. And close down all poluteing bisnuesses. I resent I am writing on papper and it took a tree to get the papper and if we get to much papper and use to many trees I resent we might have no more trees. and again, I thank you for a wonderful time at Raged Ridge [sic]."
(3rd grade student)

"After we returned, the youngsters summarized the work they did, made charts, maps and posters and presented a program sharing what they did at the Ridge with our Learning House and Middle School. The work accomplished mirrored their enthusiasm for the trip. The Curriculum Manual used for the trip is great! I intend to incorporate it in the science program here at St. George's. The only negative part of the trip was the distance. From St. George's it was a very long bus ride. If there were a possibility of developing campsites we could spend more hours there and give the students opportunity to make indepth studies of their topic."
(Lower grades teacher)

"I'm always excited when I have a chance to further a personal relationship with a child. This day provided such an opportunity for this. One boy has trouble learning in school but got super interested in the lesson and was intent on doing a good job. He answered many questions. When he got back to school he told Jan that he didn't finish his work but he wanted to later. That was neat for me." (Whitworth student teacher)

"A printed guide to the history and lore of the area would have been helpful. I realize facts are still being collected and maybe something of this nature is being planned for the future. Items such as the date the homestead was built, how long people lived in the house, how many people lived at one time . . . are of great interest to the children." (4th grade teacher)

"In order for the children to appreciate all the learning opportunities at the site, it is imperative that there be more time and additional visits arranged. For a child to get past that basic and limited perspective of pretty trees and fuzzy animals, for them to grasp the environment as a total learning classroom available for study in innumerable areas, that requires time and the development of ideas." (Whitworth student teacher)

Appendix A.4. Summarized Comments to Question 1 of the Ragged Ridge Curriculum Manual Interest and Activities Use Survey

Elementary Teachers

"The manual has a lot of super material and ideas. I may never be able to use it specifically with Ragged Ridge, but I find I could adapt it to environmental hikes, etc. that I might take children on."

"Excellent ideas in the study of plant and animal life and man's relationship to his environment."

"It is an overwhelming volume. It has more activities than one can possibly do--and even though there is something for EVERYONE this way--the "goodies" are kind of lost in the volume."

"It is one of the best developed and well organized pieces I have read."

"Very well organized and appears to be useful, although the acid test will not materialize until I take my class to Ragged Ridge."

"The materials are well developed and adaptable to the various levels."

"It provided ideas that could be adapted to fit our curriculum. We wrote our own activities from that beginning."

"Because of our unique setting I find the curriculum manual very helpful in planning units of study right here at St. George's."

"Organization and presentation is great--really easy to use. A lot of people I have talked to have never heard about it--I try to spread the word."

"If your school district permits you to partake, there are countless activities of value. However, one can certainly adapt and use suggestions without going to the site."

"Excellent for as far as it goes--ideas are also very useful and applicable on our own campus on the Little Spokane River. I'd like to see it expanded for primary grades and high school. I like the way projects are suitable to multi-age groups."

"I wish I could use it more with my given program."

"Very practical plans--adaptable to different grade levels--adaptable to different areas--steps and materials needed spelled out nicely."

"I like the emphasis on integration within existing disciplines and on pre and post visit tie-in."

"I am thankful to have it as a guide. It has many excellent ideas."

"Our sixth grade classes in Pullman hope to develop a Curriculum Manual for Kamiak Butte. I showed the other teachers your "book" to get an idea of what we could cover. The state parks people and county parks director will help us also."

"The objectives need to be more clearly defined for easier student evaluation."

"I like the opportunity in most lessons to create a sense of awe and wonder which goes such a long way in building the kind of attitudes and values that should make for the behavioral action needed as youngsters grow."

High School Teachers

"We are trying to write curriculum guides for teaching an environmental education course. We use an outdoor setting for most of the course. Your guide was informative and we're trying to adapt some of your concepts to our natural setting as your terrain and climate is much different from ours. You are five years ahead of Arkansas in environmental education."

"Very well put together. A very enjoyable class and manual."

School Administrators

"Very well organized and quite applicable in its format to this area. It is already in use in the Seebe School."

"The guide offers some concrete ideas in areas that we have not concentrated in very much; thus they are very helpful. Your center appears to be much like our own."

"This manual closely resembles many manuals in outdoor education. It is not specific to the Ragged Ridge. I would like to see a manual which uses specific resources clearly identified at Ragged Ridge."

"Many units relate to the Ragged Ridge area. They require some adaption (for Geneva, N.Y. area)."

"I like the material and structure of the program. One comment that could be considered is less structure for certain groups."

"Integrates the different curriculums."

"Plan on using it in spring of 1977. Many activities of great importance."

Interpretive Naturalists and Environmental Education Specialists

"Like to see more animal units that relate animal number to habitat needs and habitat changes (short and long term)--population dynamics--successions, etc."

"Excellent source book and program materials."

"Liked variety of areas that were suggested for activities but thought activities could have been stronger."

"Flexibility is outstanding. The learning activities are well designed and explained in an easy to read fashion."

"I ordered it as an additional reference for my staff of 25 interpreters. I can assume that some of the ideas for their activities come from it."

"I used the Ragged Ridge Manual as an example of how the NEED (STRANDS) concepts can be adapted to a specific site and conditions."

Environmental Education Center Administrators

"I found most activities unusable in their present form. I also did not find anything new--seems like just another collection of activities pulled from other sources. I would like to see more creative approaches designed with the children in mind. In particular--activities with some substance to them and designed to generate enthusiasm for understanding the environment among children with little interest."

"Very usable."

Appendix A.5. Summarized Comments to Question 2 of the Ragged Ridge Curriculum Manual Interest and Activities Use Survey

Elementary Teachers

"I have used suggestions and ideas from the manual in my science and social studies activities attempting to introduce my children to an awareness of the importance of our environment."

"I had difficulty reading inadequate maps provided--feel trails need to be better marked. I felt the time spent preparing for R.R. and followup time was very well spent. It's good for year around learning experiences."

"While I'm not a certified teacher, I do have over 8 years of teaching experience in the outdoors--the Ragged Ridge manual was easily adapted to other geographic areas and the people I worked with enjoyed the outdoor activities after I adjusted the level to their age and interest."

"Students selected area of interest from curriculum guide--followed through to complete unit of study."

"It was an important event of the year and much conversation about it revealed that learning had taken place even though formal evaluation was difficult to make."

"I found the activities excellent for getting the students involved."

"I anticipate favorable results when I enrich the current District 81 SCIS (science) program with an actual field trip to Ragged Ridge."

"My students and myself have looked upon this experience as a most productive learning experience. We are still doing follow up exercises two months after going to the Ridge."

"I did several lessons on things they hear, smell, see around them. This was done around the school. We haven't been able to arrange anything beyond the school."

"Children loved it, so did I."

"I intend to use it in my science program starting in February 1977."

"Ideas were adapted to a nearby ravine site. Ideas in book are not necessarily new but the book is a well organized reminder of activities, of holistic approach, and an indicator of objectives. I found objectives very handy, and saved a lot of time by not having to formulate our own."

"I did lesson H10 on p. 36 in our rhythms development this fall and it went well."

High School Teachers

"Excellent one-to-one teaching in an outdoor setting using a "hands-on" approach."

"Basic tree knowledge for the 9th grade biology class."

School Administrators

"The graduate teaching assistants use the book quite heavily and all have given me positive reactions (Northern Illinois University)."

"It was easily implemented and quite productive."

"Practical ideas. One adapts his own lesson plans."

Interpretive Naturalists and Environmental Education Specialists

"We use the manual in our park along with many other such aids."

APPENDIX B

CHARTS AND TABLES

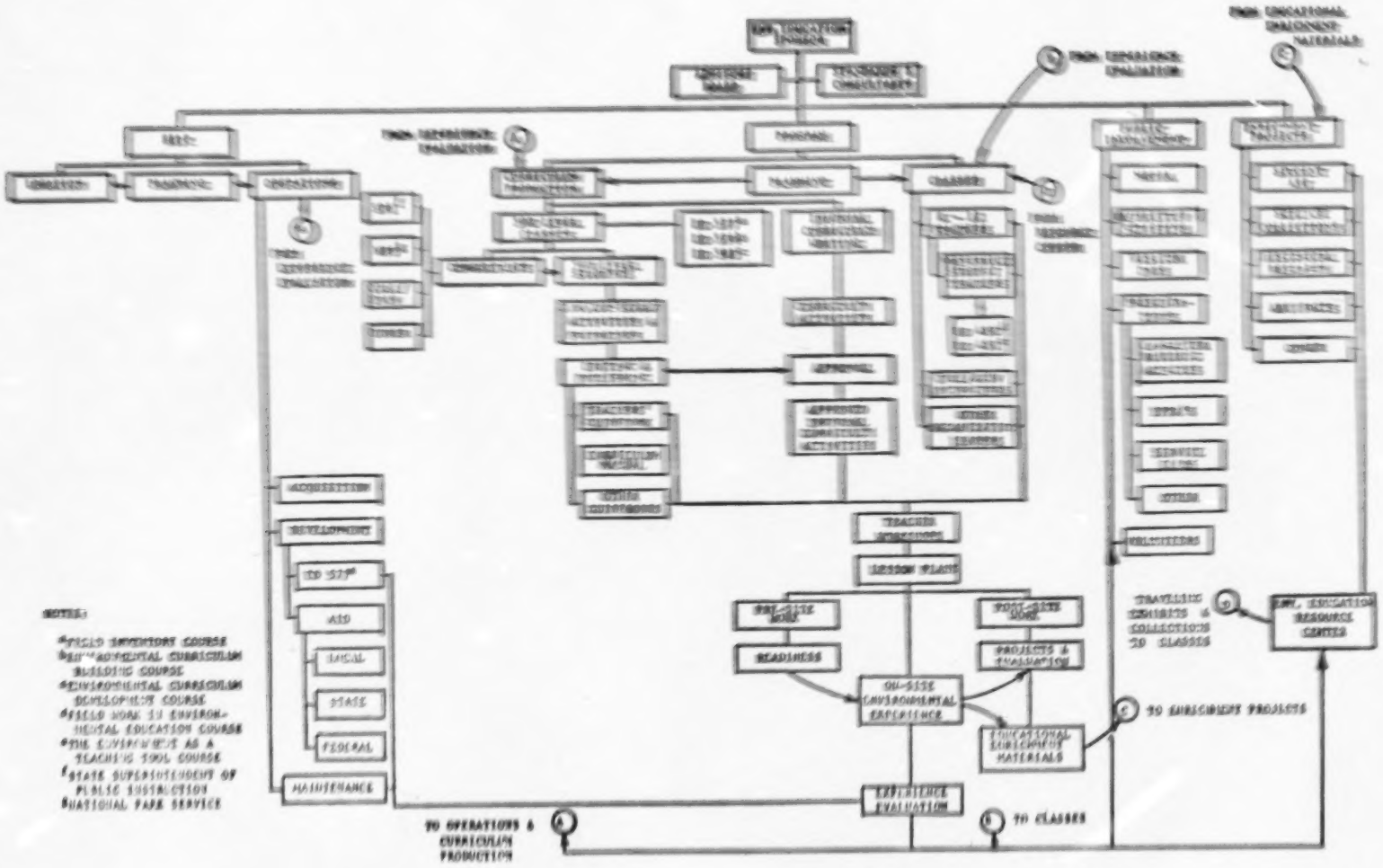

Fig. 13.--Detailed system chart of the Whitworth College Ragged Ridge Center project.

TABLE 2. Analysis of survey question 1, "Have you critically read through the Ragged Ridge Manual?"

	Yes			No	Just looked through			Did not complete answer	Comments*				Respondents
	Liked	So-so	Could be better		Liked	So-so	Could be better		+	±	-	0	
Local:													
Elementary teachers	15	..	..	..	1	..	..	5	11	2	..	8	21
Secondary teachers	1	..	..	..	1	..	..	..	1	..	..	1	2
School administrators....	3	..	..	..	..	..	..	..	2	..	..	1	3
Nonlocal:													
Elementary teachers.....	4	..	..	1	3	..	..	5	7	..	1	5	13
Secondary teachers.....	1	..	..	..	..	..	..	..	1	..	..	..	1
School administrators....	4	..	..	..	1	..	..	2	2	2	..	3	7
Interpretive naturalists and/or environmental education specialists....	4	..	..	1	1	2	..	1	5	2	..	2	9
Environmental education center administrators....	2	1	..	..	1	..	..	1	1	..	1	3	5
Total	34	1	..	2	8	2	..	14	30	6	2	23	61

*Positive comment (+); positive and negative comment (±); negative comment (-); omitted (0).

TABLE 3. Analysis of survey question 2, "Have you, or those working with you used curriculum activities from the Ragged Ridge Manual in your own local teaching situations?"

	Yes					No					Did not answer question	Comments*				Respondents
	Pleased with Results?			Teacher Workshop Held?		Do you plan to use in next year's program?		Did not complete yes or no answer								
	Yes	No	Somewhat	Yes	No	Yes	No					+	±	-	0	
Local:																
Elementary teachers.....	12	1	..	10	2	3	2	2			1	10	1	..	10	21
Secondary teachers.....	2	..	..	2	..	..	..	..			..	..	..	..	2	2
School administrators...	2	..	..	2	..	1	..	..			..	2	..	..	1	3
Nonlocal:																
Elementary teachers.....	3	..	..	2	1	6	1	2			1	5	..	..	8	13
Secondary teachers.....	1	..	..	..	1	..	..	..			..	1	..	..	..	1
School administrators...	2	..	2	5	..	..	1	2			..	2	..	..	5	7
Interpretive naturalists and/or environmental education specialists...	1	..	..	..	1	4	2	2			..	2	1	..	6	9
Environmental education center administrators...	1	..	..	1	..	1	..	3			..	1	..	..	4	5
Total	24	1	2	22	5	15	6	12			2	23	2	0	36	61

*Positive comment (+); positive and negative comment (±); negative comment (-); omitted (0).

APPENDIX C

SCHEDULES AND FORMS

Appendix C.1. Survey Interview Schedule (Guide)
of the Washington State University
Student Project

INTERVIEW GUIDE
WSU STUDENT - WHITWORTH PROJECT

Background

Whitworth College is the recipient of a 720 acre gift of land some 18 miles N.E. of Spokane on the southwestern flank of Ragged Mountain. It is some four miles north and a little east of Newman Lake and about six miles south and slightly east of Mt. Spokane at an elevation between 2700 feet and 4500 feet. The land is a combination of second growth forest, nearly level meadows, high points with excellent views and both easy and steep slopes. It has a dependable year around water supply of excellent quality from springs but no major creek or river. The land bridges two pieces of Mount Spokane State Park (MSSP) properties with the MSSP land stretching to include the Mt. Spokane recreation area. It is also contiguous to properties owned by Mr. A. T. Warner (benefactor of the land to Whitworth) and his son who separately own land south and southwestward to and including the north end of Newman Lake. Commercial activity in the area and its approaches, is confined to farming and some small logging operations. At the maximum, the parcel extends 1 3/4 miles with a minimum width of 1/2 mile. The average width of the property would approximate 3/4 miles.

As a project, Washington State University students specializing in Wildlands Recreation are now inventorying the resources of the property and as a final part of the project will be presenting some examples of potential use. The objectives are to not only preserve to a high degree the naturalness of the area but also provide an area where people can have an enjoyable experience. Furthermore, the land must "pay its way" as Whitworth College is now responsible under the terms of the gift for a 6 1/2 % annual annuity payments to Mr. Warner on the value of the land. Taxes constitute another $700 or so. In addition, as the land changes in value, the total amount of the annuity will change.

You are a leader in a certain area or areas of the Spokane Community, and as such, a student participating in the project, would like to talk with you and ask some questions concerning background information that persons such as yourself may have. On the basis of your interests, experiences and knowledge of the Spokane area, the students would be more able to in a preliminary way, determine the direction toward the proper use(s) of the land. Final use must involve knowing the detail needs and desires of the potential users as a whole, whether they be the community, educational institutions or whomever. This would require a subsequent in-depth study.

INTERVIEW QUESTIONS

General

1. Mr(s)_____, how long have you lived in the Spokane area?_____

2. From what organization do you earn your livlihood?_____ _____What is your position?_____

3. Other than my be stated in 2., are you connected in any way to a government body through appointive or elective procedures? _____If yes, what is this organization board or whatever? _____

4. Do you have responsibilities in any volunteer community service oriented group?_____If yes, what are their names?_____ _____ _____

5. Are any organizations to which you belong specifically concerned with conservation of natural resources or in some way biased toward environmental purposes?_____If so, what are their names? _____ _____

6. Are you active in outdoor sports, hobbies or other forms of recreation?_____If yes, what are they and where to you go to enjoy them?_____ _____ _____

7. Rank order the following wildland and natural resource uses according to your feelings as to which is most important:
   A. Forest Products, B. Energy, C. Recreational Activities, D. Wilderness for Wilderness Sake, E. Fish & Wildlife Habitat, F. Cattle and Sheep Grazing

   1 (Highest)_____2_____3_____4_____5 (Lowest)_____

8. Do you believe that outdoor opportunities for youth in the Spokane area are in balance with the needs of today's youth?_____ Please explain further._____ _____ _____

INTERVIEW QUESTIONS (Cont.)

The Whitworth Property

1. Are you familiar with the Ragged Mountain area where the Whitworth College property is located?_____If so, what do you recall about the area?_____

2. What were your thoughts or reaction to the gift when you first heard about it?_____

3. Perhaps you have discussed this gift with others in the community. If so, what do you perceive their reactions to be?

4. What are your personal opinions as to how such a property could best be used taking into consideration the naturalness of the area; its use for people is welcome; it is College property; it must pay its way (some $10,000/year); and that duplication of other facilities in the surrounding area should be avoided if they are adequate?_____

5. Are there organizations and individuals in Spokane or elsewhere who you think would tangibly add their support to a use effort along the lines you have just expressed?_____ If so, who might these be?_____

Appendix C.2. Curriculum Element Inventory Instrument for the Ragged Ridge Center

WHITWORTH COLLEGE
PROBLEMS IN CURRICULUM MAKING - EDUCATION 577
RAGGED RIDGE CENTER INVENTORY INSTRUMENT

Team # _____
Grid Location # _____ Trail Location # _____
Date _____

Inventoried Item (object, phenomenon, situation):

Value as a Curriculum Element
___ 1. Very rare contribution
___ 2. Exceptional "
___ 3. Routinely useful
___ 4. Most likely "
___ 5. Might be "

Your reason that you feel this should be a curriculum element:

Appendix C.5. Curriculum Activity Evaluation Form for the Ragged Ridge Center

Evaluation Form

RAGGED RIDGE CENTER
for
OUTDOOR EDUCATIONAL OPPORTUNITIES

Date_____

Name of Visiting Party_____
(Group or Individual)

Address_____ Telephone_____

_____ Zip Code_____

( ) Student ( ) Teacher ( ) Other

Specify_____

Which area or areas were visited?

( ) Trail #1 ( ) Trail #2 ( ) Trail #3

What content areas were experienced?

( ) Humanities ( ) Social Studies ( ) Natural Science

What activities were accomplished? Please be specific.

_____

_____

_____

_____

_____

_____

What, if anything, do you feel the center could do to help provide an even more successful experience for groups or individuals in the future?

Facilities: _____

_____

Program: _____

_____

Appendix C.4. Workshop Lesson Plan Form for the Ragged Ridge Center

Name_____Date_____
School_____
Grade Level or Discipline Taught_____

RAGGED RIDGE CENTER

Ed 579 - Workshop in Environmental Education

Lesson Plan for a One Day Trip

Goals - Ask yourself what are the broad goals or major reasons for giving your students such an out-door environmental experience. These may be statements for attitude, awareness, sensitivity, opportunities to interact with the environment, etc.

1.

2.

3.

Objectives - Ask yourself what specific learning experiences, skills, knowledge, values, etc. you desire from your students to obtain your goals. Check over the five STRANDS also.

1.

2.

3.

Set up a sample lesson plan with presite, on-site and post-site activities. For this workshop, it is preferred that you select interdisciplinary activities from the Ragged Ridge Curriculum Manual. However, make notes for additions or produce other preliminary alternative activities as you chck through the manual for your selections.

Suggestions: Select two activities the entire class can do - one from humanities and one from social studies
Select two or three small group activities such as from the natural sciences.
Keep in mind your own special interest students that may wish to take advantage of this opportunity to further their specific interests, i.e., fungi artist, ground squirrel behavior, etc.
Be prepared for seasonal projects (blooming times, fall foliage,etc.) or the unexpected (seeing a hawk, a caterpillar, storm clouds, etc.)

Name _____ Date _____
School _____

The Class

Pre-site: Fill in rectangles with Activity Number and Titles which you have selected.

1.

2.

↑ Entire Class Activities ↑

A | B | Small | C | Group | D | E

Activities

A	B	C	D	E
1.	1.	1.	1.	1.
2	2.	2.	2.	2.
3.	3.	3.	0.	3.

Trans.

On-site: Fill in rectangles with time of day, activity number, trail number (e.g. House 08) or grid location (e.g., B12-03) for doing the activity. Scheduling activities for small and large groups is at teacher's descretion.

1.	1.	1.	1.	1.
2.	2.	2.	2.	2.
3.	3.	3.	3.	3.

1.

2.

Trans.

Post-site: Follow through that lessons fulfilled the needs or goals and objectives. Compile data? How would students communicate small group experiences to others? How is learning evaluated?

1.

2.

1.	1.	1.	1.	1.
2.	2.	2.	2.	2.
3.	3.	3.	3.	3.

Appendix C.2. Questionnaire for the 1976 Ragged Ridge Curriculum Manual Interest and Use Survey

WHITWORTH COLLEGE RAGGED RIDGE CURRICULUM MANUAL
INTEREST AND ACTIVITIES USE SURVEY

You are a:

Check: ☑

- ☐ Teacher
- ☐ Interpretive Naturalist
- ☐ School Administrator
- ☐ Administrator or Director of an Outdoor Area
- ☐ Other_____

Where did you first hear about the Ragged Ridge Program?

- ☐ National Park Service Publication
- ☐ Other Publication _____ (Title) _____ (Issue (if known))
- ☐ Personal Reference _____
- ☐ Other_____

What was your reason for ordering the Ragged Ridge Manual?

- ☐ Looking for New Program Input
- ☐ Have a Critical Need
- ☐ Just Curious
- ☐ Other_____

Have you critically read through the Ragged Ridge Curriculum Manual?

☐ Yes ☐ No ☐ Just Looked Through

If "Yes", what is your reaction to the Manual

☐ Liked* ☐ Just "So-so*" ☐ Could Be Much Better*

*Comments and suggestions:_____

_____

_____

_____

Have you, or those working with you used curriculum activities from the Ragged Ridge Manual in your own local teaching situations?

☐ Yes ☐ No

If "Yes":

☐ Public or private school classes?

_____

School Grade City

☐ Organizational Groups?

_____

Name City

Were you pleased with the results?

☐ Yes* ☐ No* ☐ Somewhat*

*Please comment on your teaching/doing/learning experience:_____

_____

_____

_____

Were teacher/leader workshops held before classes were taken into the field?

☐ Yes ☐ No

If "No", you did not use any activities from the manual, do you plan to use within the next year?

☐ Yes ☐ No

It would be appreciated if you would give your name and address below:

Name_____

Street Address_____

City_____ State_____ Zip_____

THANK YOU VERY MUCH!

APPENDIX D

PREPUBLISHED DOCUMENTS

Appendix D.1. The National Park Service STRANDS Concepts

THE ENVIRONMENTAL STRANDS

VARIETY AND SIMILARITIES

Many likenesses and differences occur among living and non-living things. A variety of functions, sizes, and structures exists in plants and stars, rocks and animals, processes and people. Yet there are sufficient similarities to permit their classification into orderly patterns. These classifications increase one's understanding of his world.

PATTERNS

Organizational patterns are kinds of structures that may be found in rock formations as well as in social groups of people and animals. Functional patterns include traffic movements and classroom schedules. Such patterns occur both in nature and in artistic design.

INTERACTION AND INTERDEPENDENCE

Nothing exists in isolation. Each individual is constantly interacting with living and non-living things: his family, his belongings, his friends, his world. These people and things also depend on the individual in order to function properly. The process is continuous (as part of the life cycle) even after death, for dead life forms nourish the living.

CONTINUITY AND CHANGE

Both living and non-living things are constantly changing -- whether among galaxies and planets or within body cells and body systems. Some things remain the same in spite of change. Matter and energy may change in form, but they can never be created or destroyed.

EVOLUTION AND ADAPTATION

Over centuries of time, living and non-living things alter and develop in the process called evolution. Probably the greatest number of changes over the longest periods of time come about in order to enable an organism to adapt to the environment. Hereditary factors then preserve the continuing elements.

These strands are adaptable to any subject area, any type of site, any grade level, and will serve to unify studies throughout your environmental education program. The object is to teach not the strands but the fact that they exist in all lessons, all situations. Not every strand need be identified and used in any one situation. Your ability to work with the strands will be in proportion to your knowledge of the way the world, which is both natural and social, works.

Appendix D.2. Examples of Ragged Ridge Curriculum Manual Activities

STUDENT ACTIVITY

Activity No. H48

Activity Title: Uniqueness

Strand Objectives: Interaction and Interdependence, Continuity and Change, Adaptation and Evolution.

Specific Objectives: Student is aware that unique situations happen when man interacts with the natural environment.

Materials: Pencil, paper

Procedures

Pre-Site: Discuss typical examples of unique situations in nature, those things that would not have happened if man had not intervened in some way. For example, apple trees in the middle of the forest; they do not naturally belong there, but are there because someone planted them. Be careful not to use examples that have occurred at the Ragged Ridge Center.

On-Site:

1. Students look for unique situations; a small aspen grove, the black walnut trees, an abandoned log structure, or whatever, and makes his decision that this is what he wants to think about and write on later.

Post-Site: Using this situation as a general theme, he recalls or creates a story of how that something or someone came to be in a unique setting--perhaps where there was hostility, poverty, or unpleasant conditions, and how the subject overcame the hardships and became a helpful or valuable asset to the area.

Results: The student is able to relate a unique situation in nature to humanistic standards. He/she can understand an individual's interaction with a natural area.

STUDENT ACTIVITY

Activity No. SS7

Activity Title: How Man Can Affect a Forest

Strand Objectives: Interaction and Interdependence, Continuity and Change

Specific Objectives: To show how man has converted some natural resources of the forest to benefit himself

Materials: Note pad and pencil if notes are to be taken

Procedures

Pre-Site: What are "natural resources"? What are we running short of? Why are we running short?

On-Site:

1. Begin at old homestead area. Notice how man has cleared this area of trees. Observe how some natural plants have returned, providing forage for animals.
2. Walk on to the road. Look for signs of grading. Could this cause or help prevent erosion. Will this mean more traffic into the area? Could it have caused some animals to lose their homes? How?
3. Proceed to the old dump. How has man left his mark here?
4. Continue on to a logged area. Could the debris left here be a fire danger? What might the logged trees have been used for? Complete the tour looking for signs, if any, of how concerned man has helped to replenish the forest by careful planting and management.

Post-Site: Set up an ideal untouched environment in the classroom. Play a game where the students decide how they would use the resources. Discuss and evaluate their sense of responsibility towards the environment.

STUDENT ACTIVITY

Activity No. NS25

Activity Title: Interdependence in the Environment

Strand Objectives: Interaction and Interdependence

Specific Objectives: To have the student identify interdependent relationships in the environment.

Materials: Pencil, paper or cassette, camera (optional).

Procedures

Pre-Site: What does it mean to be "interdependent"? How do these kinds of relationships develop in nature? How are all things related? Are we related to anything else? What about relationships in the man-made environment?

On-Site:

1. Divide the class into subgroups.
2. The assignment could be stated as follows: "Let's see if you can find something--some animal or plant--that depends upon some other animal, plant, or something in the environment, to stay alive."
3. The students should make notes of their search or put notes on tape. They can record data by using a camera.

Post-Site: Write a short story to accompany the proper sketches, pictures, photographs. Share the stories with one another.

Results: The student better understands what a dependent relationship is and is able to express himself about these relationships.

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Appendix D.4. Area of Concentration Description of Whitworth College's Environmental Studies[1]

E N V I R O N M E N T A L S T U D I E S

Objective

To provide a basic knowledge and practical experience in environmental issues as they relate to business, industry, government, public relations, social work, recreation, or other practical areas (see supportive options below).

Basic Courses

Biology 101, Life Science or μBio 151, Bioscience
Chemistry 131, Introduction to Biochemistry
Sociology 120, Social Reality
Home Economics 361, Nutrition
Biology 341, Microbial Ecology or Health Sciences 200, Microbiology
Biology 345, Environmental Biology or 104 Human Ecology
Biology 363, Genetics and Evolution or 102 Human Heredity
Mathematics 356, Elementary Probability & Statistics
January term, Biology 230, Environmental Health
Jan. or summer internship program

Supportive Areas

Knowledge of the environment will need to be expressed vocationally through one or more of the following fields or disciplines. This area of concentration requires at least six courses from one or two of the following departments:

Biology	Mathematics
Business & Economics	Physics
Chemistry	Physical Education
Computer Science	Political Science
Geology	Psychology
Home Economics	Sociology
Journalism	

Preparation for

Graduate program in environment, public health, environmental law, and supportive area fields.

Careers with governmental agencies (public health, pollution control, public assistance, etc.), business and industry with environmental concerns, and news media as environmental specialists.

Coordinator

Mrs. Nicolin Gray.

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[1]From Whitworth College (1976a:43).

Appendix D.5. Course Descriptions[1] of Whitworth College's Ed 450 and Ed 451

450 FIELD EXPERIENCE IN ENVIRONMENTAL EDUCATION Merle Prater

Students become familiar with fundamental concepts of environmental education through preparatory classroom sessions and actual practice in the out-of-doors "classroom" at the Whitworth College Ragged Ridge Center* in conjunction with public and private school classes. Stress is put upon the "real world" characteristics of education where the natural and man-made environments are used as a teaching vehicle to show how the natural sciences, social studies, and humanities can be brought together. The theory of the environment as a teaching tool, along with the basis of curriculum writing for the "away-from-the-classroom" environment, will be touched upon. Each student is expected to assist physically and educationally at least one or more public and private school classes, spending a full day at the Ridge with the class(es) as well as visiting a few hours with the class(es) before and after the Ridge experience.

Education minors, not student teaching, would be expected to form the bulk of the class, but not entirely. If you love the out-of-doors and like working with youth, please see the instructor. Good if you have had Ed 451, the Environment as a Teaching Tool, given in the spring term--or consider taking this as a follow-on course. See Ed 451 description. Maximum of 20 students.

*The Ragged Ridge Center is being developed as a regional environmental education facility for use by public and private school students. K-12 through college levels. Within two hours' drive. It is mountainous property between 2,700 feet and 4,500 feet in elevation--a microcosm (over one square mile) of eastern Washington mountain areas, containing over three miles of trails, trail structures, and forest roads. Full course.

451 THE ENVIRONMENT AS A TEACHING TOOL Merle Prater

An in-depth introduction to environmental awareness education principles and techniques from the standpoint of what educators and others are experiencing in this important and growing teaching mode. A major objective is to find out how the humanities, social studies, and the natural sciences can comfortably fit together by using both the natural and manmade environments as a teaching/learning framework. Emphasis will be placed on such a holistic (tied-together) approach to life and on how man, the person, and the student should be involved in it. How and why school children can be motivated to be more reactive to the more traditional indoor classroom symbolic processes of "reading about," "talking about," and "writing about," etc., by using real-life environmental situations surrounding the learner. The Ragged Ridge Center of Whitworth College will be

[1]From Whitworth College (1976b:14).

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under scrutiny as an outdoor classroom in bringing about such results. Independent work will be expected for the last part of the course. The work should be directed toward research and real-life interactions with the educational processes and institutions through personal contacts. Noneducation students are invited. See instructor. Full course.

Appendix D.6. Area of Concentration Description[1] of Whitworth College's Environmental Education for Elementary Teachers

E N V I R O N M E N T A L E D U C A T I O N

The environmental education area of concentration aims to prepare the elementary teacher to teach and manage a wide variety of necessary subject matter; to have an environmental specialty; and (as far as possible) to have a good grounding in the fundamentals of the origin of environments, prehistoric man, historic man, mankind's present, and extrapolation processes into mankind's future.

The courses required and recommended to cover these educational functions are as follows:

Awareness
- Required: Journalism 125, Bio 104, Ed 451
- Applied Studies*: 151, 251, 351, 451 (1/4 course each year)
- Recommended: Soc 265/365, History 357, English 125, Music 106, Soc 242

Aesthetic
- Required: Art 107
- Recommended: Art 284, Art 136, English 277. Music 121

Scientific
- Required: Chem 131, Earth Science 131, Bio 151
- Recommended: Bio 345, Bio 232, Bio 244, Bio 245, Bio 304, Bio 341, Bio 356

Utilitarian
- Required: Econ 203, Political Studies 294, Ed 450
- Recommended: Soc 311, Art 250, Behavioral Sci 265, Home Econ 360, Home Econ 410, Journalism 244, Phys Ed 155, Recreation 365

Ethical
- Required: Philosophy 251
- Recommended: Religion 272, History 245

*These courses will be available beginning in the fall of 1977.

Minimum courses required for environmental education, 14 1/2 courses; maximum, 17 1/2, of which five must be upper division. The recommended courses are representative; the list is not meant to be exhaustive. Each nonrequired course taken should be worked out with the student's adviser and area-of-concentration coordinator so that special aptitudes of the student and possibilities of a second major or minor could be taken into consideration.

Note: The certification committee is looking favorably on this area of concentration as a major for elementary teachers as of this writing (May, 1976). Check with the coordinator or your adviser.

Coordinator: Merle Prater.

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[1]From Whitworth College (1976a:41).

APPENDIX A

CORRESPONDENCE

WASHINGTON STATE
PARKS & RECREATION COMMISSION

COVERNOR
DANIEL J. EVANS

LOCATION: THURSTON AIRDUSTRIAL CENTER PHONE 753-5755

July 7, 1976

TO: Washington State Parks and Recreation Commission

FROM: Ian Tveten, Assistant Director - Resources Development

RE: Mount Spokane State Park - Ranged Ridge Environmental Education Center

On April 1, 1976 Mr. Edward Lindaman, President of Whitworth College, met with Commission Chairman Barnett to discuss the possibility of the Commission obtaining title to the College's Ragged Ridge Environmental Education Center through a land trade. On April 16 Mr. Lindaman wrote to Director Odegaard briefly outlining his proposal for the Commission to gain ownership of the 720 acre Ragged Ridge site through a trade of lands of comparable value. In subsequent meetings with Mr. Lindaman and Mr. Merle Prater, Director of the Ranged Ridge Center, staff discussed the proposal and Whitworth College requested the opportunity to present a report on the Ragged Ridge Center to the Commission at its July meeting. The presentation is listed as item E-2 on the July Commission meeting agenda.

Background Information:

In 1973 Whitworth College received a gift of 720 acres from long-time Spokane area residents. The gift was contingent upon the payment of an annual $10,000 annuity payment until the death of the benefactors, who are in their 70's.

In order to keep these payments from becoming a financial burden to the College, two public-spirited citizens agreed to pay the annuity for four years, thus giving the College time to plan and develop the site into a regional learning resource.

Much cooperative effort has gone into the study of the potential use of the site and development of curriculum for its use by schools and colleges. The Superintendent of Public Instruction has designated Ragged Ridge as an Environmental Learning Center and it has been designated as a National Environmental Study Area by the National Park Service. It is the only site to receive the NESA designation in Eastern Washington and is one of only three in the entire state.

The Ragged Ridge site is located in Township 27 North, Range 45 East and lies southerly of the southeastern tip of Mount Spokane State Park. Acquisition of the Ragged Ridge site would provide contiguous state ownership between Mount Spokane State Park and a 160 acre parcel of presently isolated State Parks' land. The property owned by the College was appraised in 1972 at a fair market value of $150,000. At an appreciation rate of five percent per year, the 1976 value is estimated to be approximately $168,000.

The existing development on the site consists of trails totalling 3.2 miles and one partially constructed trailside shelter. Access to the site is via county road. There are no utilities on the site, although power is available in the near vicinity and there is a spring on the property that can be developed as a water source.

The College proposes that the Commission enter into a land trade to acquire ownership of the Ragged Ridge property, assume the responsibility of developing it into an environmental learning center to serve the Spokane and northeastern Washington areas, and operate it along the same lines as the nine other existing environmental learning centers presently operated by the Commission. The College would continue its active support of curriculum development, generation of community support, and would work closely with the local school districts and Educational Services District 101 in the programming of public school use of the site, both before and after development. However, the basic responsibility for programming will lie with the public school community.

According to the College's proposal, State Parks' responsibility would be to develop the site and provide administrative and maintenance services at the state's cost. State Parks has long identified the need for an ELC in the Spokane area and this site has potential for a wide variety of outdoor education experiences, although recreational activities are somewhat limited. The site is becoming established as an accepted outdoor resource learning area and appears to have wide public support generated through ongoing programs and extensive promotional efforts by Whitworth College. This support coupled with the quality of the natural resource and future development could make the site a viable ELC.

It is understood by the College that the Commission must be assured of broad public support for the proposal, that the legislature must approve any contemplated action, and that all development and operating costs will be programmed through the normal budgeting process. Also, if the Ragged Ridge Center is to be acquired by the Commission through a land trade for other State Parks' properties, local public hearings must be conducted in the areas of the lands to be traded.

The attached proposal has been prepared by Whitworth College for presentation and discussion at the July Commission meeting for future consideration along with other potential sites to meet the needs for a state park ELC in the Spokane area.

cc: Executive Staff

Attachments